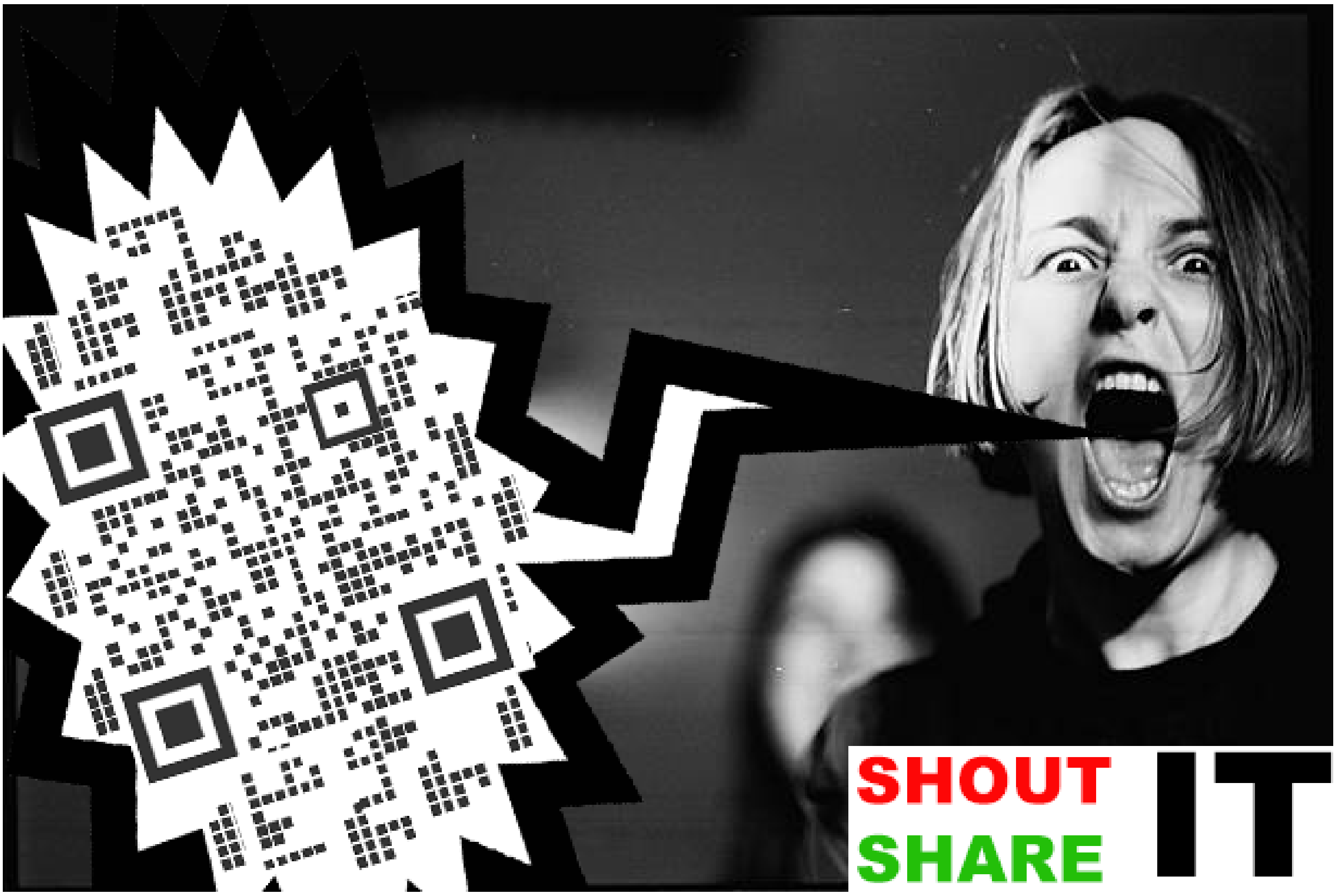
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BRITISH BIRDS.

VOL. I.

UNIV. OF CALIFORNIA

A HISTORY OF BRITISH BIRDS.

BY

WILLIAM YARRELL, V.P.L.S., F.Z.S.

NATURÆ DISCERE MORES.

FOURTH EDITION, IN FOUR VOLUMES.

ILLUSTRATED BY 564 WOOD-ENGRAVINGS.

VOLUME I., REVISED AND ENLARGED

BY

ALFRED NEWTON, M.A., F.R.S.,

PROFESSOR OF ZOOLOGY AND COMPARATIVE ANATOMY IN THE UNIVERSITY OF CAMBRIDGE,
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LONDON:
JOHN VAN VOORST, PATERNOSTER ROW.
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PROSPECTUS.

The publication of the late Mr. Yarrell's "History of British Birds" was begun in July 1837, and finished in May 1843. The merits of the work having been at once fully recognized, a Second Edition was called for in 1845, and then a Third, which last appeared in 1856, but a few months before its author's death. A large impression of each has been sold, and the work has been generally and deservedly regarded as the standard authority on British Ornithology. A New Edition is now demanded, not only by the public at large, but by many who possess the other issues, and a few remarks on the mode in which it is proposed to be conducted may not be out of place.

The Second and Third Editions, with the exception of some few though not unimportant additions and alterations (to be presently mentioned more particularly), were, as a whole, mere reprints of the First, which, as has been already said, appeared some thirty years ago. Since that time, it is no exaggeration to say that the literature of the subject has been nearly doubled, while, even since the publication of the last Edition, an extraordinary increase has been made in the knowledge of our British Birds. Very many of the species respecting which little was actually known in 1856, have been traced by competent observers to their breeding-quarters, and their habits ascertained, and, in some instances, minutely recorded. The heaviest task in preparing a New Edition of Mr. Yarrell's volumes, is that of sifting among the abundance of information supplied by the authors as well of independent works as of papers in Natural-History journals,

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and in the publications of learned Societies, for such particulars as are most needed to give the more general reader a correct idea of the economy and attributes of the birds which do not permanently frequent any part of the United Kingdom.

Such a mass of material as has been furnished in the manner indicated, enables the ornithologist of the present day also to rectify many statements made by his predecessors. In no respect, perhaps, is this fact more manifest than in determining the geographical range of species, whether in the fullest sense of the word "British," or only occasional visitors to our shores. It will be remembered that precision on this point was made by Mr. YARRELL a prominent feature of his work; and, when the amount of information at his disposal is taken into consideration, it must be conceded that he was therein eminently successful. The excellent example which he himself set by adding to or correcting statements bearing upon this important subject, in his successive Editions, will not be lost upon the new EDITOR, nor will the equally suggestive alterations in the arrangement of certain species be neglected by him. When Mr. YARRELL had satisfied himself that his original allocation of certain forms had been erroneous, he did not hesitate to correct the mistake—as, for instance, the Pratincole and the Phalaropes, placed in his First Edition among the Rails and Coots, but subsequently, with unquestionable propriety, referred to the Plovers and Sandpipers. The EDITOR, therefore, will not scruple to make such systematic changes as may be considered to be satisfactorily established. He is, however, desirous of stating that, in cases which may be still regarded as doubtful, he will, whatever be his own predilections, preserve the original order of Mr. YARRELL, thinking it a lesser evil to continue a possibly or even a probably erroneous arrangement, than to offer a new one which time may show to be no improvement.

The lax method, adopted by older writers on British Ornithology, of admitting any chance straggler from distant lands to a place beside the real inhabitants of this country, has been in these days very generally condemned, as tending to confound all correct notions of Geographical Distribution. The EDITOR, however, does not think himself warranted in rejecting any of the species falling under this category which have been recognized by Mr. YARRELL, but the claims for admission of new ones will be carefully scrutinized. And, that he may not appear capricious in his choice, the EDITOR wishes to state, that of the land-birds lately recorded as having occurred in Britain, it is his intention only to include those which belong to that great zoo-geographical region of the Old World of which the British Islands form a portion.

The scientific names of the birds used by Mr. YARRELL will be retained, for the convenience of those who are accustomed to them, but it is the intention of the EDITOR also to prefix names in accordance, as far as possible, with the code of Rules for Zoological Nomenclature adopted by the British Association for the Advancement of Science—a code, the chief principles of which were admitted by Mr. YARRELL himself. It is hoped that, by following these rules, a more uniform practice than now exists may be ultimately reached, and even numerous synonyms which in the case of many common species at present perplex the most scientific ornithologists, may eventually disappear.

In conclusion, the EDITOR has to observe, that while on his part no trustworthy source of information shall be willingly neglected, he will be glad to receive any communications likely to be of use in elucidating the "History of British Birds."

LONDON, *March*, 1871.

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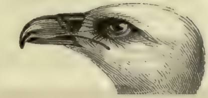
BRITISH BIRDS.

ACCIPITRES. *VULTURIDÆ.*



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118, 23, *transpose* transverse *and* longitudinal.
122, 25, *for* p. 237 *read* p. 437.
156, 35, *for* by 1·09 by ·98 *read* by from 1·09 to ·98.
158, 3 of note, *for* p. 677 *read* p. 477.
214, 9, *for* differ *read* differs.
229, 1 of note, *for* 1866 *read* 1766.
233, 1 of note, *after* p. 160 *insert* (1766).
317, 24, *for* Galicia *read* Galizia.
352, 1 of note, *for* Syrian specimens *read* The examples which breed in Syria.
361, 5 of note, *for* ἰπιλαίε *read* ἰπιλαίς.
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Vultur fulvus.

Gyps, *Savigny*†.—Beak strong, thick, and deep, the sides rather swollen, maxilla rising immediately in front of the cere, forming a culmen curving to the tip, where it is somewhat abruptly hooked. Mandible straight and rounded,

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* *Vultur fulvus*, J. F. Gmelin, Syst. Nat. i. p. 249 (1788).

† Système des Oiseaux de l'Égypte et de la Syrie, p. 8 (1810).

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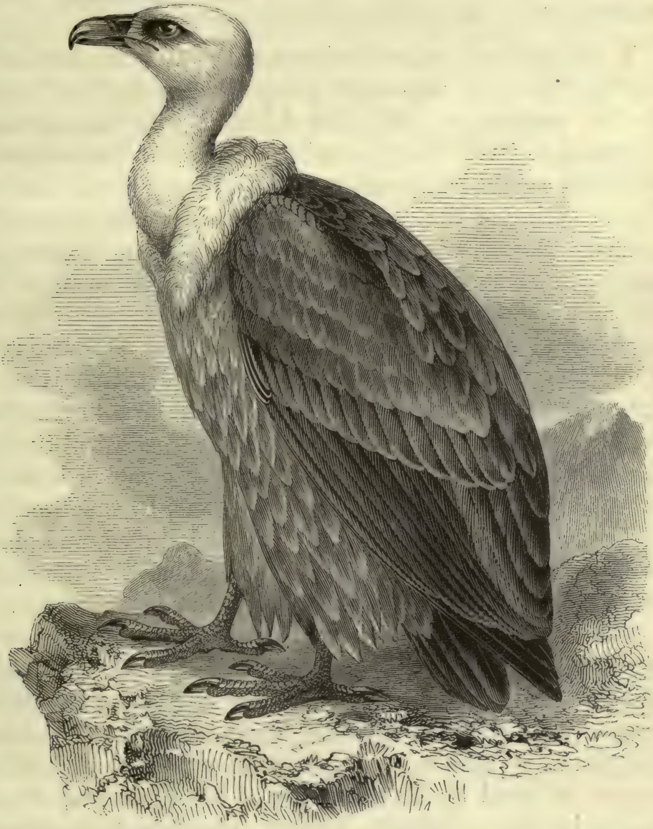
BRITISH BIRDS.



GYPS FULVUS (J. F. Gmelin*).

THE GRIFFON-VULTURE.

Vultur fulvus.

GYPS, *Savigny*†.—Beak strong, thick, and deep, the sides rather swollen, maxilla rising immediately in front of the cere, forming a culmen curving to the tip, where it is somewhat abruptly hooked. Mandible straight and rounded, becoming narrower towards the point. Nostrils naked and diagonal. Tongue fringed with spines. Head slender and covered with short down, as is most part of the neck; above the shoulders a ruff of elongated feathers. Feet strong, claws slightly hooked; middle toe rather longer than tarsus, and united at base to outer toe by a membrane. Wings long; first quill-feather short, the fourth the longest. Tail of twelve or fourteen feathers.

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* *Vultur fulvus*, J. F. Gmelin, Syst. Nat. i. p. 249 (1788).

† Système des Oiseaux de l'Égypte et de la Syrie, p. 8 (1810).

I AM indebted to the kindness of Admiral Bowles for the first notice of the capture in Ireland of the Griffon-Vulture. In the autumn of 1843 the Admiral was visiting Lord Shannon, at Castle Martyr, and saw there this Vulture, which had been caught by a youth on the rocks near Cork Harbour, in the spring of that year. The bird was full grown; the plumage perfect, without any of the appearances consequent upon confinement; there was no reason to suspect that the bird had escaped from any ship; it was very wild and savage, and was in perfect health. Not long afterwards Mr. Thompson observes in the 'Annals of Natural History' (xv. p. 308), his Lordship "offered the bird to Dr. Ball for the collection in the Garden of the Zoological Society, Dublin; but before arrangements were completed for its transmission it died. The specimen was, by the directions of Lord Shannon, carefully preserved and stuffed, and placed at the disposal of Dr. Ball, who has added it to the collection in Trinity College, Dublin. It is in adult plumage."

This species of Vulture, of large size and proportionate strength, possesses also great sustaining powers of flight, and has, as might be expected, a very extended geographical range. In Europe it inhabits Spain, and though visiting the South of France in considerable numbers, it does not appear to breed to the northward of the Pyrenees. It also occurs in Italy, Hungary, Turkey, Greece, and the Crimea. It has been met with in Germany, and it is found in Sardinia and Crete. In North Africa its range extends from Morocco in the west to Egypt in the east, and thence southwards, according to some authorities, even to the Cape of Good Hope, not occurring, however, on the western side of the continent. In Asia it frequents Asia Minor, Syria, Palestine, Persia, and Northern India. It must be observed, however, that according to the views of some ornithologists, several races, if not distinct species, have been confounded under the name of *Gyps* or *Vultur fulvus*, and in particular that which inhabits Spain and the north-western portion of Africa, has received the name of *Gyps occidentalis*. Mr. Blyth, however, has remarked that a specimen which he received under this designation from Algeria, was simply a female of *Gyps fulvus*, for in the *Vulturidæ*, unlike the other birds of prey, that sex is always the smaller.

Of late years the habits of this Vulture have been closely observed by many of those ornithologists whom a spirit of inquiry, possibly engendered by the earlier editions of this work, has prompted to wander far from home in the pursuit of the study to which they are devoted, and there are probably few exotic birds about which more has been written than the Griffon-Vulture. Its manners have been examined by these adventurous naturalists in very many of its haunts, and it is difficult to select from their accounts, chiefly published in 'The Ibis,' the passages most worthy of citation, where all are of interest. Since the presumption, however, is that the bird taken in Ireland, as above mentioned, was of the western race, it may be advisable to restrict the extracts to remarks which can only refer to that form.

In Algeria, Canon Tristram mentions that on the occasion of a Camel being slaughtered in the Desert, which the Griffon-Vulture does not habitually frequent, it was not till the next morning that a bird scented, or rather descried, the prey. "That the Vulture uses," he continues (Ibis, 1859, p. 280), "the organ of sight rather than that of smell, seems to be certain from the immense height at which he soars and gyrates in the air. In this instance one solitary bird descended, and half an hour afterwards was joined by a second. A short time elapsed, and the Nubian Vulture (*Otogyps nubicus*) appeared, self-invited, at the feast; and before the bones were left to the Hyæna, no less than nine Griffons and two Nubians had broken their fast. . . . . May we not conjecture that the process is as follows?—The Griffon who first descries his quarry, descends from his elevation at once. Another, sweeping the horizon at a still greater distance, observes his neighbour's movements, and follows his course. A third, still further removed, follows the flight of the second; he is traced by another; and so a perpetual succession is kept up as long as a morsel of food remains over which to consort."

Mr. Osbert Salvin, also writing of this species in a part of the Eastern Atlas, where it was very abundant, occupying with its nests every available ledge in some extensive ranges of rocks (Ibis, 1859, p. 179), says:—"The eggs appear to be laid in the month of February, as most of the nests contained young in the beginning of April. During the time of incubation, one of the parent birds sits constantly, and if frightened off, returns immediately. The nest is composed almost entirely of sticks, which are used in greater or less abundance, as the situation requires. The eggs obtained from wild birds generally show indications of natural colouring, in addition to the blood and dirt with which they are usually stained. This colouring is dispersed in faint spots of a reddish hue, sometimes all over the egg, but generally at the larger or smaller end." He adds, that the young "on emerging from the egg is covered with white down; the sides are dark."

In Spain, Lord Lilford (Ibis, 1865, p. 168) mentions his having seen on the banks of the Guadalquivir, below Seville, a party of at least forty of these birds regaling upon a dead horse. "I have since," he adds, "met with this Vulture in all parts of Spain which I have visited, in great abundance, particularly in April, 1864, in the Sierra de la Palmitera, near Marbella, where we were encamped for two days in pursuit of Ibex." More lately, Mr. Howard Saunders, writing of the birds of Southern Spain, states (Ibis, 1871, p. 56), "This is the common Vulture of the country, breeding in small colonies in every mountain-range. It lays early in March, as I found some young birds in the first week of April. The eggs (usually one, but occasionally two) have seldom any genuine marking; but I know of a colony of six where the eggs are always somewhat spotted and streaked."

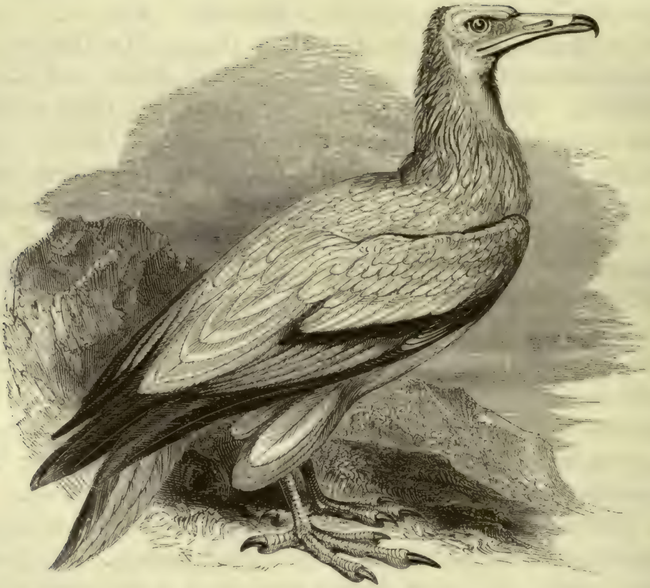
Lack of space renders it impossible here to quote the accounts given of this bird (if, indeed, it be the same species) in countries further to the east. They have been given in much detail by Mr. Allan Hume, Mr. Hudleston, Mr. Charles Farman, and Messrs. H. J. Elwes and T. E. Buckley. Canon Tristram has described (Ibis, 1865, p. 264) two extensive colonies in the cliffs near Mount Carmel, and, in his 'Natural History of the Bible,' he states that there can be no doubt of the identity of the Hebrew word *Nesher* —invariably rendered "Eagle" by the translators of our accepted version—with the Arabic *Nissr*, the modern name of this species of Vulture.

An egg of *Gyps fulvus*, taken by Mr. Philip Lutley Sclater, the Secretary of the Zoological Society of London, at Kef M'Satka, in the Eastern Atlas, in March, 1859, and given by him to the Editor, measures 3·64 by 2·82 in.; it is of a pure white, with a few small markings of pale red; but more highly-coloured specimens are in other collections.

The following description was taken from a fine living specimen in the garden of the Zoological Society. The beak, from the curved point to the cere, is of a yellowish-white horn-colour; the cere itself bluish-black; the irides reddish-orange; the head, neck, and circular ruff of dull whitish down; the lanceolate feathers below the circular ruff, the plumage of the upper surface of the body and the wing-coverts, light yellowish-brown; the shaft of each feather of light wood brown; the primaries and tail-feathers dark clove brown; the lower part of the neck in front, and the upper part of the breast dull white, mixed with light brown; under surface of the body reddish yellow-brown; the smaller under wing-coverts light brown; the large under wing-coverts almost white; the legs and toes lead colour; the claws black; the anterior portion of each toe covered with six large scales, the remaining portion and the legs reticulated.

A specimen, sent to the Zoological Society by Sir Thomas Reade, from Tunis, measured, from the point of the beak to the end of the tail, three feet eight inches; from the anterior bend of the wing to the end of the longest quill, twenty-seven inches; the middle toe and claw five inches.

ACCIPITRES. *VULTURIDÆ.*



NEOPHRON PERCNOPTERUS (Linnæus*).

THE EGYPTIAN VULTURE.

Neophron percnopterus.

NEOPHRON, *Savigny*†.—Beak straight, slender, elongated, rounded above, encircled at the base with a naked cere, which extends more than half the length of the beak: upper mandible with straight edges, hooked at the tip; under mandible blunt, and shorter than the upper. Nostrils, near the middle of the beak, elongated, longitudinal. Head and neck partly bare of feathers. Wings long, rather pointed; the third quill-feather the longest. Legs of moderate strength and length; tarsi reticulated; feet with four toes, three before, one behind; anterior toes united at the base. Tail-feathers fourteen.

Two examples of this Vulture were seen on the shores of the Bristol Channel, and one of them, now in the possession of the Rev. John Matthew, of Kilve, in Somersetshire, was shot near that place in October, 1825. "When first discovered, it was feeding upon the carcass of a dead sheep, and had so gorged itself with the carrion as to be unable or unwilling to fly to any great distance at a time, and was therefore approached without much difficulty and shot. Another bird, similar to it in appearance, was seen at the same time upon wing at no great distance, which remained in the neighbourhood a few days, but could never be approached within range, and which was supposed to be the mate of the one killed."

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* *Vultur percnopterus*, Linnæus, Syst. Nat. Ed. 12, i. p. 123 (1766).

† Système des Oiseaux de l'Égypte et de la Syrie, p. 8 (1810).

On the 28th of September, 1868, as recorded by Dr. Bree in 'The Zoologist' for that year (p. 1456), another Egyptian Vulture was shot at Peldon, in Essex, attracted by the blood of some slaughtered geese. This bird, as seems to have been the case also with the Somersetshire specimen, is said to have been in immature plumage, and is minutely described by Dr. Bree.

The Egyptian Vulture is said to be common in the interior of South Africa, but, according to Mr. Ayres, it is rare in Natal, and Mr. Layard states that it is decidedly a scarce species near Capetown. It is there called by various names which signify "White Crow," the name referring to the adult bird. Le Vaillant states that this species inhabits the whole of Southern Africa, and is infinitely more common within the tropics than elsewhere. The Egyptian Vulture does not live in flocks, like other Vultures; although, when attracted by a carcase, eight or ten may be seen assembled. At other times it is rare to see more than two together. The male and female seldom separate. In the districts which this species inhabits, every group of natives has a pair of these Vultures attached to it. The birds roost on the trees in the vicinity, or on the fences which bound the inclosures formed for their cattle. They are to a certain degree domiciled and harmless. The people do them no injury: on the contrary, they are rather glad to see and encourage them, because they clear the premises of all the offal and filth they can find. In default of other food, they eat frogs, lizards, and snakes.

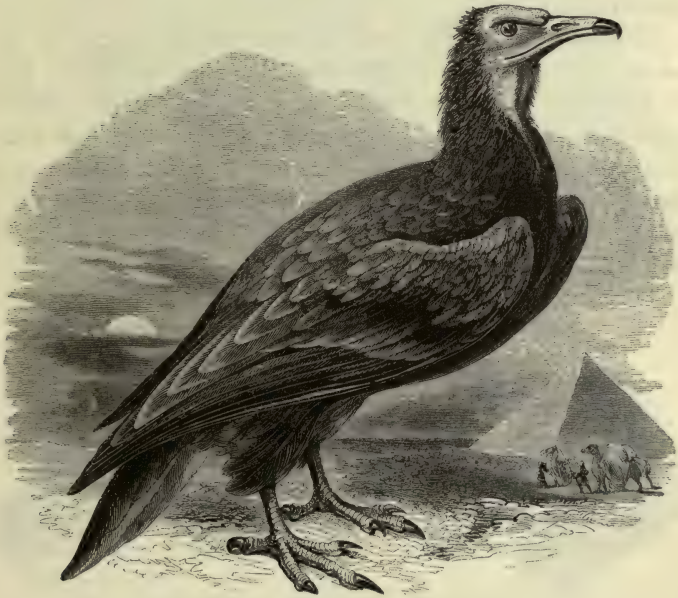
Like the preceding species, the Egyptian Vulture is unknown along the western coast of Africa; but, unlike it, it inhabits the Cape Verde Islands and the Canaries, and has occurred in Madeira. Tangier seems to be its most westerly limit on the African mainland, and thence the first eggs of this species seen in England were obtained from M. Favier in 1845, by the late Mr. John Wolley, as has elsewhere been mentioned (Ootheca Wolleyana, p. 1). They are subject to great variation in size and colour, being blotched and mottled with dark or light red, sometimes so closely that the white ground is not visible. They measure from 2·68 to 2·32 by 2·2 to 1·72 in. In Algeria the species is abundant, and, according to Mr. Salvin, "wherever a cliff exists in the mountains that surround the table-lands of the Eastern Atlas, sure enough it will be occupied by a pair." It visits also all the oases of the Desert in summer, and follows the nomad camps for offal. The nest is said by Canon Tristram to be placed on a rocky ledge, and to consist of a foundation of branches, on which are heaped "rags, patches, old slippers, and whole basketsful of camels' hair and wool."

From the vicinity of Tangier this species passes over to Portugal, where the Rev. A. C. Smith fell in with it on many occasions; it is common in summer in Spain, especially in Andalucia, where it fearlessly follows the plough, according to Lord Lilford. It inhabits and breeds on the Pyrenees and in Lower Provence. It has occurred in Germany, and Buffon received an adult specimen from Norway; it is not, therefore, at all surprising that this bird should have been taken in England. The Norwegian specimen, placed by him in the National Cabinet, was compared by Le Vaillant with his Cape specimens, and he was convinced they were of the same species.

Malta, Sicily, Corfu, and Crete, with other islands of the Mediterranean Sea, are, as might be expected, visited by this Vulture. Bruce, and many travellers after him, says it is frequent in Egypt and about Cairo, where it is called by the Europeans "Pharaoh's Hen." In Arabic it is called *Rachmah*. This name, with its Hebrew equivalent, *Racham*, rendered in the English Bible "Gier-eagle," is supposed to be derived from *Rechem*, which signifies love or attachment; probably, says Canon Tristram, from the male and female never parting company. Bruce adds, that this bird builds its nest in the most deserted parts of the country, and lays but two eggs. The parent birds attend their young with great care, and feed them for the first four months. It is considered a breach of order to kill any one of these birds in Cairo. They are efficient scavengers. In Eastern Africa it has been observed by nearly all recent travellers.

From Turkey, where it breeds as far north as Bulgaria, this species ranges over the Crimea, Asia Minor, and Palestine; but its eastern limits are somewhat doubtful, since of late it has been declared that the well-known Indian bird generally identified with *Neophron percnopterus*, is a distinct species, *N. ginginianus*, and usually recognizable by its light-coloured beak. On the other hand, it is certain that some Indian Neophrons have dark beaks, so that the question still remains in obscurity.

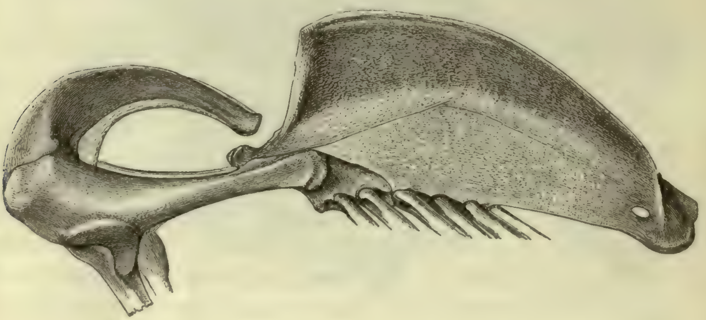
In the adult bird, the whole length from the point of the

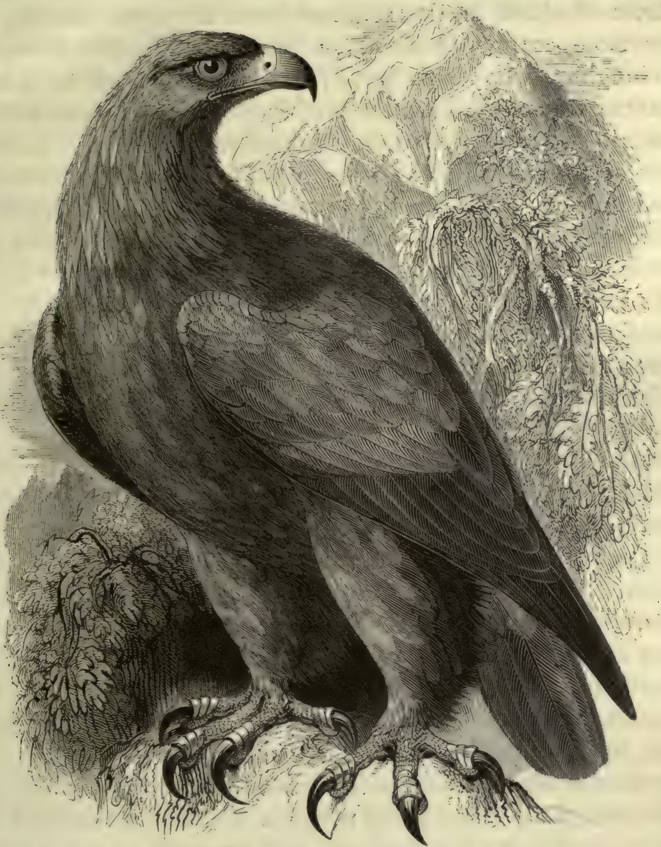


beak to the end of the tail is from twenty-six to twenty-nine inches. The beak is black; the cere yellow; the irides red; the naked skin of the cheeks and front of the neck yellowish flesh-colour; the feathers of the occiput and back of the neck slightly elongated: all the plumage white except the primary and secondary wing-feathers, the first of which are wholly black; the second have the proximal half black,—which colour, extending beyond the ends of the great wing-coverts, forms by its exposure a dark band across the middle of the wing; the remaining portion of the secondaries white; the tail is graduated, the feathers of the middle being the longest; the legs and toes pale flesh-colour; the claws black.

The young bird has the base of the bill yellow; the point black; irides reddish-brown; the naked skin of the cheeks and front of the neck livid grey; the general colour of the plumage dark brown, with a few light-coloured feathers, and the edges of others indicating the approach to maturity; great quill-feathers black; legs and toes greyish-brown; claws black.

The woodcut at the head of this article represents an adult, and that on the preceding page an immature bird of this species. The subjoined figure shows the sternal apparatus, the posterior portion of which is subject to some variation, as well in outline as in the presence or absence of the foramen by which it is pierced. The specimen from which this figure is drawn possesses a foramen on the right side but none on the left.





AQUILA CHRYSAETUS (Linnæus*).

THE GOLDEN EAGLE.

Aquila chrysaëtos.

AQUILA, *Brisson*†.—Beak strong, of moderate length, curved from the cere, pointed, the cutting edges nearly straight. Nostrils oval, lateral, directed obliquely downward and backward; or circular. Wings large and long, the fourth quill-feather the longest. Legs strong; tarsi feathered to the junction of the toes. Feet strong; the last phalanx of each toe covered by three large scales; claws strong, hooked.

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* *Falco chrysaëtos*, Linnæus, Syst. Nat. Ed. 12, i. p. 125 (1766).

† Ornithologie, i. p. 420 (1760).

The Golden Eagle, though occasionally seen and sometimes obtained in the southern part of Great Britain, is far more commonly found in Scotland. In the time of Willughby, who died in 1672, it was reported to breed annually upon the high rocks of Snowdon. The same writer describes a nest found in Derbyshire in 1668. Bewick quotes from Wallis the remark, that this species formerly had its eyry on the highest part of Cheviot, and Sir William Jardine speaks of the precipices of Westmoreland and Cumberland having once boasted a similar distinction. "Upon the wild ranges of the Scottish Border," he, writing in 1838, continues, "one or two pairs used to breed, but their nest has not been known for twenty years, though a straggler in winter sometimes is yet seen amidst their defiles;" and Mr. Robert Gray, whose new work on the 'Birds of the West of Scotland' contains a long and interesting account of the Golden Eagle, says, that though looked upon throughout the country generally as a rarity, it is, from its habit of wandering in the autumn, frequently seen in the Lowlands. Indeed, the Rev. T. B. Bell informed Mr. A. G. More, only a few years since, that it still bred in East Galloway; but it is not till one enters the Highlands that one can confidently expect to see this species. Even there the number of birds, though yet considerable, is far less than by all accounts it was some years ago, and it is probably still diminishing, notwithstanding the protection afforded to them on some of the larger deer-forests. In most of the western and northern counties of Scotland, it is believed that a few nests are still tenanted by the Golden Eagle, as is also the case in the Hebrides, where, according to Mr. Gray, in the work before-mentioned, the birds "are smaller and darker in colour than those bred on the mainland." In the Orkneys it used also to breed, but, according to the best authorities, not in the Shetlands. The habits of this species, as observed by the late Mr. John Wolley, who was very familiar with it, are recounted in much detail, from his notes, in the 'Ootheca Wolleyana,' and representations of two eyries in Argyllshire are there given, from drawings made on the spot by Mr. Wolf. With a few exceptions it takes up its quarters in some mountainous district, but the locality chosen is often remarkably accessible, and occasionally even on the ground. The nest usually consists of a platform of sticks, upon which is laid freshly-gathered heather, and sometimes large sprigs of fir-boughs. The lining is composed of fern, grass, moss, or any convenient material, but principally, and almost invariably, of tufts of *Luzula sylvatica.* The nest is repaired every year, so that an old structure is frequently of very large size, and while it appears loose, is yet so firm as scarcely to yield to the weight of a man. Instances are known, however, in Scotland, of the nest being placed in a tree. One of these has been examined by that excellent observer, Mr. A. E. Knox, who kindly showed some drawings of it to the Editor. Another has been described in 'The Ibis,' by Captain Powlett-Orde, and this contained four eggs—an unusual number for this bird to lay.

The Golden Eagle breeds early in the year, often with the country under deep snow. The hen sits very close, but when disturbed flies off in alarm, and seldom reappears until her enemies have retired. The eggs are generally two in number, but three are not unfrequently found. They are laid at intervals of a few days, and are hatched in the same order. In size and shape they do not vary so much as do those of some other birds, but they are subject to great difference in colour, ranging in this respect from a pure, spotless white to the richly-dyed carnations of a pair figured by Mr. Hewitson, in the third edition of his 'Illustrations,' well-marked examples being rather the rule than the exception. The colour of the mottling is commonly some shade of red, but eggs are not unfrequently found where it is of a purplish-brown, while spots of delicate lilac are seen underlying the darker blotches and streaks. They measure from 3·23 to 2·72 by 2·55 to 2·11 in.

The eggs are hatched in Scotland about the end of April, and the young are at first covered with snow-white down, which gives place to the dark-coloured nestling plumage. The bird described from the Derbyshire nest by Willughby is said to have been "as black as a *Hobby*, of the shape of a *Goshawk*, of almost the weight of a *Goose*, rough-footed, or feathered down to the foot, having a white ring about the tail."

As regards its occurrence in England at the present day, numerous instances are on record, but it is certain that the White-tailed Eagle has often been mistaken for it; and it is not possible always to determine where this error has been made. One of the best-authenticated, as well as the most recent cases, however, is that published by Mr. Henry Stevenson, in 'The Zoologist' for 1869 (p. 1863), from which it is clear that a Golden Eagle was found dead at Stiffkey, in Norfolk, in November, 1868.

In Ireland, this fine bird, according to the late Mr. Thompson, "inhabits permanently several of the most lofty and retired mountain ranges" throughout the island; but it is to be feared that since his time Eagles of both species have become far rarer. In the wilder parts of Mayo and Donegal, however, the Golden Eagle probably still breeds, though in the county last mentioned it was believed that a few years since only a single pair remained. The well-known "Eagle's Nest" at Killarney—whether formerly occupied by this species or the White-tailed Eagle—has been long deserted; but it is possible that some of the hilly tracts of the south are still tenanted by the Golden Eagle, whence, and from the more northern localities, examples may wander to other parts of Ireland. Smith, in his 'History of Kerry,' relates that a poor man in that county got a comfortable subsistence for his family during a summer famine out of an Eagle's nest, by robbing the Eaglets of part of the food brought by their parents, whose attendance he protracted beyond the natural time by clipping the wings, and thus retarding the flight, of the young birds.

The Golden Eagle is not found in Iceland; but, with this exception, it inhabits and breeds in suitable localities in nearly all the countries of Europe, from Lapland to Sicily, and from Portugal to Bulgaria. In Asia it occurs throughout Tartary and Siberia (excepting its northern parts) to Dauuria; its southern limit so far to the east being the Himalayas, where, according to Mr. Jerdon, it is found but rarely, and not elsewhere in India. In Palestine it is very common in winter, and occasionally at the same season occurs in Arabia and Egypt, penetrating even to Abyssinia. In Algeria it breeds as far south as the Atlas, while in winter it frequents the Dayats of the Desert.

North America is inhabited by an Eagle which, though regarded by many naturalists as a distinct species, and named *Aquila canadensis*, is, in the opinion of Mr. John Henry Gurney (than whom on this subject there can be no better authority), not distinguishable by any constant character from the *A. chrysaetus* of the Old World. Of this bird Wilson, in his 'American Ornithology,' states that it is found from the temperate to the arctic regions, particularly in the latter, breeding on high precipitous rocks, always preferring a mountainous country. Sir John Richardson considers that it is seldom seen in North America far to the eastward of the Rocky Mountains.

In the whole extent of its range there seems to be but little difference in its habits. In some countries it is less of a rock-haunting bird than in the British Islands. Thus in Lapland its nest, according to Mr. Wolley's experience, is always placed in a somewhat large tree. In the Atlas, a cliff is rather the commoner position, though an arboreal site is frequently chosen.

The flight of the Golden Eagle is described by those who have witnessed it as majestic and powerful in the extreme; and from the great strength of the bird, it preys with ease on fawns, lambs, hares, and other game. It feeds much, however, on carrion, and this habit gives great facility for its destruction. Montagu relates, that "when sporting in the neighbourhood of Ben-Lomond, on the summit of the lesser mountains that form its base, a Grouse was wounded, and flew with difficulty eighty or an hundred paces. An Eagle, apparently of this species, perceiving the laborious flight of the Grouse, descended with rapid wing from the adjacent lofty cliffs before our guns were reloaded, and, in defiance of the shouts made to deter him, carried off his prey." In another part of the Western Highlands of Scotland, Montagu "had an opportunity of witnessing the powers of the flight of this bird in pursuit of its quarry. An old Black Cock was sprung, and was instantly pursued by the Eagle (who must have been on a neighbouring rock unperceived) across the glen, the breadth of which was at least two miles. The Eagle made several pounces in view, without success, but as there was no wood nor cover on the opposite mountain sufficient to conceal so large a bird as the Heath Grouse, he doubtless forfeited his life to the merciless tyrant of the rocks."

Mr. Thompson has given the following information on the authority of a sporting friend. "When out hunting among the Belfast Mountains, an Eagle appeared above his hounds as they came to fault on the ascent to Devis, the highest of the chain. As they came on the scent again, and were at full cry, the Eagle for a short time kept above them, but at length advanced and carried off the hare, when at the distance of from three to four hundred yards before the hounds."

M. Luighi Benoit states that in Sicily, a pair of Golden Eagles have been seen to hunt in concert for game; one of the birds gliding over the ground and beating the bushes and shrubs with its wings, while the other remains on the look-out at a moderate elevation. A Rabbit or a Hare, if driven out, is immediately seized, and the prey thus obtained is shared with its companion.

Eagles are said to be very long-lived; one that died at Vienna was stated to have lived in confinement one hundred and four years. Their voice is sharp and loud, consisting generally of two notes, repeated many times in succession. Two birds of this species kept by Mr. Selby "appeared untameable in disposition, their fierceness remaining undiminished through years of confinement. They did not exhibit any partiality even for the person who constantly attended and fed them, but were as ready to attack him as a stranger."

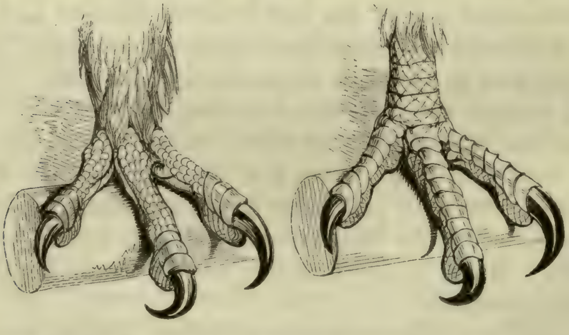
In the menagerie at the Gardens of the Zoological Society there are Golden Eagles and White-tailed Eagles; but the keepers find the Golden Eagles the most tractable of the two species, and several instances have been recorded wherein the latter have been trained to take Hares and Rabbits. In Central Asia a large Eagle, called by the name of *Bergut*, *Berkut*, or *Bearcoot*, and thought by some naturalists to be the *Aquila chrysaetus*, is often used for the capture of Antelopes, Foxes, and even Wolves. It is carried on horseback, or on a perch between two men. It seizes the smaller animals by the head with one foot, and by the haunch with the other. The larger ones it attacks on the head alone. Such a bird, when well trained, is valued by the Kirghiz, says Pallas, at the price of two Camels.

The whole length of an adult male Golden Eagle is nearly three feet; the adult female is still larger. The beak is bluish horn-colour, darkest at the tip; the cere yellow; the skin of the lore tinged with blue; the irides hazel, the pupils black; the feathers on the top of the head and back of the neck pointed in shape, and rufous-brown: the general colour of the plumage of the body dark brown, the chin and throat particularly so; the wing-primaries nearly black, the secondaries brownish-black; the wing-coverts reddish-brown, varied with dark brown; the feathers of the belly and thighs bay; those of the tail varied with two shades of brown, the ends dark: the legs covered with bay feathers; the toes yellow and reticulated, except the last or distal joint of each toe, which is covered with three broad scales; the claws are black, the outer claw of each foot the smallest of the four.

In a younger specimen of the Golden Eagle with the basal or proximal half of the tail white, the feathers on the back of the neck were less rufous, and the general colour of the plumage on the body and wings more uniform, and darker. In this state it is the Ring-tailed Eagle and *Aquila fulva* of authors. White varieties of the Golden Eagle have been seen and recorded.

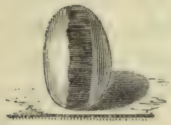
The Eagles of the mountains of Sainte Victoire, near Aix in Provence, have been described as forming a distinct species under the name of *Aquila barthelemii.* They constantly differ from other Golden Eagles, it is said, by the presence of a few white feathers among the scapulars. Two of these birds, taken from the nest in 1857, were sent to Mr. Gurney, and one of them, never having before shewn any departure from the ordinary plumage of *A. chrysaetus,* was observed in 1864 to have the first scapular on each side of a pure white. The Norwich Museum possesses a similar example from Algeria. Young Golden Eagles, before assuming the fully mature plumage, often have the feathers of the tarsus white, and in this state some ornithologists have been inclined to regard them as belonging to a distinct species.

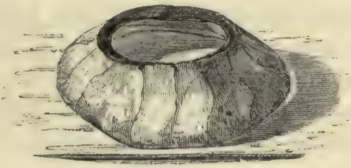
The foot of the Golden Eagle is so distinctly marked from that of the White-tailed or Cinereous Eagle, as to afford the means of deciding between the two at any age; and the three anterior toes of both species are therefore here figured to shew the distinction. The foot on the left hand is that of the Golden Eagle, in which the tarsus is clothed with feathers and each toe is covered with small reticulations as far as the last phalanx, then with the three broad scales already referred to. In the foot of the White-tailed Eagle, represented by the figure on the right hand, the reticulations are confined to the tarsus, the whole length of each toe being covered with broad scales.



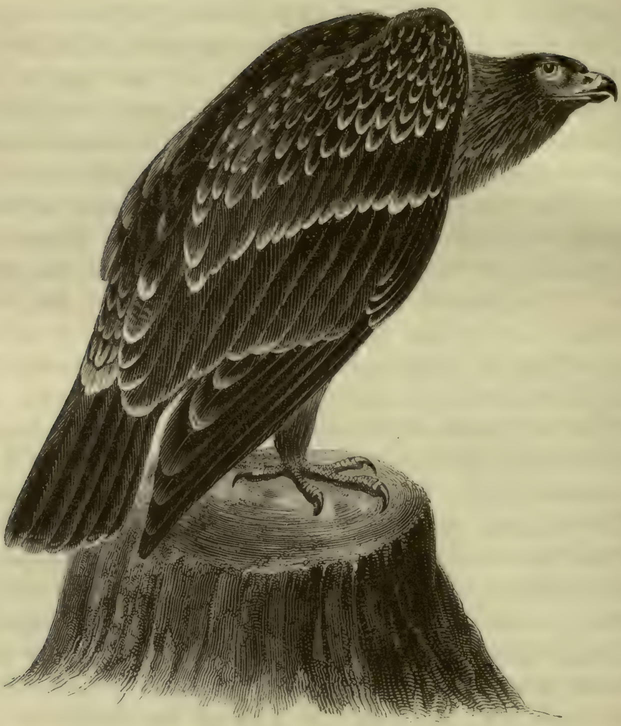
The figure of the Golden Eagle at the head of this article was taken from a fine specimen at the garden of the Zoological Society, where it had lived for eight years.

The power of vision in birds is observed to be very extraordinary; and in none is it more conspicuous than in the Eagles, and the *Falconidæ* generally. It has been stated that, probably in the whole range of anatomy, no more perfect adaptation of structure to function could be adduced than is to be found in the numerous and beautiful modifications in the form of various parts of the eyes of different animals, destined to exercise vision in media of various degrees of transparency as well as density. The figure on the right hand of the vignette below represents the circle, composed of fifteen bony plates, by which the orb of the eye of the Golden Eagle is supported. These bony plates are capable of slight motion upon each other. The figure on the left hand in the vignette below represents the crystalline lens of the same bird; the lens being subject to great variety of form in different birds. In the Eagle, the proportion of the axis to the diameter of the lens is as three and eight-tenths to five and seven-tenths; in the Eagle-Owl, which seeks its prey at twilight, the relative proportions of the lens are as six and seven-tenths to seven and eight-tenths; and in the Swan, which has to select its food under water, the proportions of the lens are as three to three and eight-tenths. Birds have also the power of altering the degree of the convexity of the cornea. With numerous modifications of form, aided by delicate muscular arrangement, birds appear to have the power of obtaining such variable degrees of extent or intensity of vision as are most in accordance with their peculiar habits and necessities.





ACCIPITRES. *FALCONIDÆ.*



AQUILA NÆVIA (J. F. Gmelin*).

THE SPOTTED EAGLE.

Aquila nævia.

FOR the particulars of the occurrence of this addition to the ornithology of the British Islands, I am indebted to the kindness of Mr. Robert Davis, Junior, who sent me also a coloured drawing made from the bird now preserved in the Museum of the University of Dublin, from which the representation here given was copied. " This specimen," observes

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* *Falco nævius,* J. F. Gmelin, Syst. Nat. i. p. 258 (1788).

Mr. Davis, "was shot in the month of January of the present year, 1845, on the estate of Lord Shannon, and was at the time in a fallow field devouring a rabbit. Another bird similarly marked, but reported to have been of a lighter shade of brown, was shot at the same place within a few days, but was unfortunately not preserved; both had been noticed during the two previous months sweeping over the low grounds in the neighbourhood, which is near Youghal, and between Castle Martyr and Clay Castle."

In the 'Zoologist' for 1861 (pp. 7311 and 7817), Mr. Edward Hearle Rodd records the occurrence of two Spotted Eagles, both immature males, in Cornwall. The first was shot in Hawk's Wood, at Trebartha, near Cheesewring, on the 4th of December, 1860. The second was killed at St. Mawgan, near St. Columb, at the end of October or beginning of November, 1861.

This Eagle, very similar in appearance to the Golden Eagle, but almost one-third smaller in size, is a well-known inhabitant of many parts of Europe, and is said to have been formerly used in Falconry. Professor Nilsson has recorded one killed in Lapland, and a second in Scania, while Faber mentions its occurrence in Sleswick. In the western portion of North Germany it is seldom met with, though it has been recorded by Zander as breeding in Mecklenburg. Further to the eastward it becomes abundant, and of its habits in Pomerania, where it is especially so, Dr. Krüper and the late Forester Hintz have given many details. It has been killed in Belgium and Luxemburg, and, according to MM. Jaubert and Barthélemy-Lapommeraye, is a bird of regular passage in the south-east of France, breeding in some of the wooded parts of the Hautes-Alpes. In Spain it is of rare occurrence, and, according to Professor Barboza du Bocage, has been only once killed in Portugal. It probably breeds in Algeria, but, in Mr. Salvin's opinion, is not numerous there. In Lower Egypt it has been observed by many ornithologists to be very common in winter, and Dr. von Heuglin states that it extends along the valley of the Nile to Kordofan, Sennaar, and even to Abyssinia.

South-east of the countries of Europe first mentioned, this Eagle appears to be very generally distributed in suitable localities. It is not known from Sardinia, but occurs in various parts of Italy, and breeds on the Appenines, as also in Sicily, where Malherbe mentions an eyry containing two Eaglets lying amid the bones of rabbits and reptiles; but that which created the greatest surprise was to find beneath this great structure some nests of the Tree-Sparrow, containing eggs and young, and that these little birds had no dread in thus establishing themselves close to so formidable an enemy. Mr. C. A. Wright says that it has occurred at least once in Malta.

In Turkey the Spotted Eagle is stated by Messrs. Elwes and Buckley to be most abundant in the wooded plains of Macedonia. In a series of interesting articles in the 'Revue de Zoologie,' by MM. Alléon and Vian, on the migration of birds-of-prey on the Bosphorus, these naturalists say that it passes twice a year in numerous bands, but that it also breeds in the lofty trees of the forest of Belgrade, near Constantinople. In Bulgaria it is not uncommon, and is most numerous near Devna and Pravidy. "In its habits," says Mr. C. Farman, "it strongly resembles the Buzzards, generally flying low in pursuit of its prey, which, if belonging to the feathered tribes, it strikes in the air;" and the same gentleman saw a nest in an ash overhanging a stream, which was warmly and softly lined with the blossoms of the tree, and contained one young bird and two eggs. Further to the north, Mr. Hudleston (Ibis, 1861, p. 368), in an animated description of the down-country of the Dobrudscha, says, that *Aquila nævia* has its nest in the low blackthorn bushes which dot the surface of the open plateau, or even more generally on the ground itself. "I found, or was directed to," he says, "no less than four, two of which were on the ground, under the shelter of bushes; two were on the bare plain."

Further to the east and north-east, it is not easy to trace the exact limits of the Spotted Eagle's range, for the task is complicated by the existence of a larger race or, in the eyes of many ornithologists, species, to which the name of *Aquila clanga* has generally been applied, and it may possibly be this form which is so abundant in Pomerania. Both forms are said to occur in Palestine, but Mr. Hume is confident that the bird which inhabits India belongs to the true *A. nævia*. Mr. Jerdon, in his invaluable work on the birds of that country, says that the Spotted Eagle is found in suitable places throughout India. It is tolerably common in the Carnatic and Malabar coast, but rare on the table-land. Mr. Blyth says it is common in the Bengal Sunderbunds. It preys upon all sorts of small animals—squirrels, rats, birds, lizards, and frogs. These last, according to Mr. Hume, form its favourite food, in quest of which he has known it follow the course of a canal in progress to a district which it had not previously inhabited. The Norwich Museum has a specimen said to have come from Sumatra.

The egg in general character resembles that of the Golden Eagle, but commonly seems not to be so highly coloured. That figured by Mr. Hewitson in the last edition of his work measures 2·5 by 2·02 in.

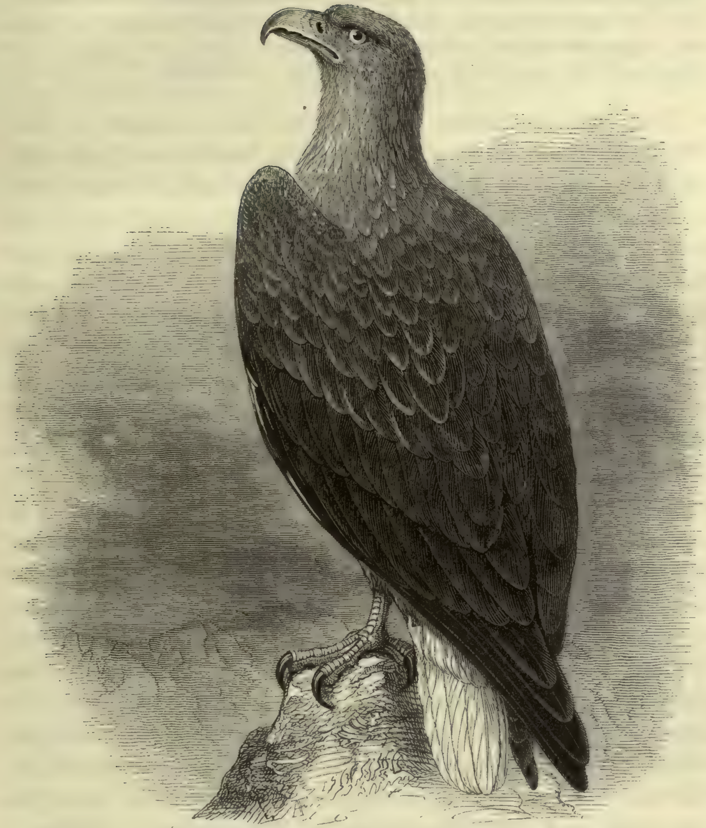
The young bird in its first year has the bill of a dark bluish horn-colour, becoming lighter in colour towards the base, the cere yellow; irides hazel; the whole head, neck, back, wings, and tail dark chocolate-brown; the tips of all the wing-coverts marked with a crescentic patch of pale wood-brown; the tertials, upper tail-coverts, and tail-feathers the same; under surface of the body dark brown, the feathers of the thighs and legs varied with paler brown lines; the legs feathered down to the tarsal joint; the toes yellow, reticulated for a portion of their length, but ending with four large and broad scales; the claws nearly black.

The young of the second year, as figured by Mr. Gould in his 'Birds of Europe,' is more uniform in its colour than the bird here represented, but has some of the smaller wing-coverts, the greater coverts, and the tertials tipped with light brown; the general colour dark reddish-brown.

An adult bird had the neck, back, wing-coverts, and tail reddish liver-brown; the head, both above and below, rather lighter in colour, the feathers of the upper part of the head and neck lanceolate; the primaries almost black; under surface of the body very little lighter in colour than the back; all the feathers white at the base; legs, toes and claws as in the young birds.

The whole length twenty-seven and a half inches, the wing from the anterior joint twenty-three and a half inches; the fourth and fifth quill-feathers nearly equal in length, but the fifth rather the longest in the wing. The wings when closed reach to the end of the tail.

According to Professor Schlegel, *Aquila nævia* can be distinguished by its round and small nostrils from *A. clanga*, in which they are wider and elliptical. The same high authority also thinks that the white markings on the wings are not indicative of age, but simply individual peculiarities, adding, that an example in the Museum of Leyden, brought up from the nest, and known to have moulted three times, retained the spots with which it was originally adorned.—*Muséum des Pays-Bas,* Aquilæ, pp. 6, 7.



HALIÆETUS ALBICILLA (Linnæus*).

THE WHITE-TAILED EAGLE.

Haliæëtus albicilla.

HALIÆETUS, *Savigny*†.—Beak elongated, strong, straight at the base, curving in a regular arc in advance of the cere to the tip, and forming a deep hook. The

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[*] *Vultur albiulla* (misprint), Linnæus Syst. Nat. Ed. 12, i. p. 123 (1766).

[†] Système des Oiseaux de l'Égypte et de la Syrie, p. 8 (1810).

upper ridge broad and rather flattened. Edges of the maxilla slightly prominent behind the commencement of the hook. Nostrils large, transverse, and of a lunate shape. Wings ample; the fourth quill-feather the longest. Legs having the tarsi half-feathered; the front of the naked part scutellated, and the sides and back reticulated. Toes divided to their origin; the outer one versatile. Claws strong and hooked, grooved beneath; that of the hind toe larger than that of the inner, which again exceeds that of the others.

As a British species the White-tailed, Cinereous or Sea-Eagle, is much more abundant than the Golden Eagle, and on some parts of the coast of these islands is not of rare occurrence. It chiefly frequents the neighbourhood of the sea, whether the shore be low and bordered by sand-hills, or by high and rocky cliffs. In either case it keeps a look-out from some elevation, and is equally ready to seize ground-game, fowl, or fish. Carrion and offal also are very attractive to it, but this taste does not hinder it from evincing a partiality for fawns, as its habit of resorting to deer-parks and forests shows. It has been taken in most districts of England, and even very near London, though less frequently in the midland than in the maritime counties. On the east and south-east coast, though not numerous, it may be regarded as a regular autumn and winter visitant; not that it confines itself to the sea-board, but haunts also the larger waters and the extensive rabbit-warrens of the interior. Messrs. Gurney and Fisher, in the 'Zoologist' for 1846, observe that "when they appear on the coast, the birds of this species are constantly followed and mobbed by flocks of Gulls, and that when they come inland they are similarly accompanied by Rooks." These visitants are almost invariably in immature plumage, and Mr. Stevenson, in his excellent 'Birds of Norfolk,' says that in no instance has he known the adult to occur in that county, where Sir Thomas Browne, writing two hundred years ago, speaks of the not unusual appearance of the "*halyœtus*, or fen eagles." Indeed, in former times, this species must have been far more abundant in England than at present, for there is good reason for believing that it bred in many stations around the kingdom. To it, probably, belonged the Eaglet which, in Warner's 'Isle of Wight,' is said to have been taken from the Culver Cliff so lately as 1780, as well as the nest which Dr. Moore mentions as having formerly existed on Dewerstone Rock, near Dartmoor. Willughby speaks of an eyry, certainly a Sea-Eagle's, in Whinfield Park, Westmoreland, and in 1692 Aubrey was told that Eagles "do breed in the parish of Brampton," in the same county. Dr. Heysham, in Hutchinson's 'Cumberland,' published in 1794, says that in his day this species bred almost every year near Keswick and Ullswater, and in that district, in July, 1835, Mr. Thompson says he saw two Eagles on the same day. Mr. A. G. More, whose elaborate papers (in 'The Ibis' for 1865), on the "Distribution of Birds in Great Britain," are full of original information on that interesting subject, learnt from Mr. Crellin that a pair of Eagles used to breed in the high cliffs of the Isle of Man until about fifty years previously, when they were destroyed in a snow-storm.

In the South of Scotland the Sea-Eagle used to breed in Dumfriesshire and East Galloway, on Ailsa Crag in the west, and on the Bass Rock in the east, but it seems now to be quite extirpated from those localities, though still found breeding in the Highlands and Islands, its eyry being commonly placed in the high cliffs of the coast; but when it establishes itself inland, it is generally upon a rock or island in the middle of a lake. "Here it builds," says Wolley, "upon the ground or in a tree, a nest whose construction does not at all differ from that of the Golden Eagle, there being always in it a certain amount of *Luzula sylvatica*. The tree need by no means be a large one : I have seen two nests of different years, in separate islands in one loch, each only about four feet from the ground, in very small trees." This accurate observer adds, from his own experience in the Highlands, Orkneys and Shetlands, a great number of further particulars respecting the many nests that came under his notice, which may be found at length in the 'Ootheca Wolleyana,' but cannot be conveniently quoted here. Mr. Robert Gray also, in his 'Birds of the West of Scotland,' gives many more interesting details of numerous eyries in the Hebrides, as well as on the mainland, carefully refraining, in the interest of the birds, which are for various reasons much persecuted, from mentioning the precise localities occupied. In Ireland, as appears from Thompson's work, there were a good many spots on which the Sea-Eagle there maintained its position; but it is much to be feared, from the unrelenting destruction of the species which has been carried on for some years past, that a very different story would now have to be told by any person as well-informed upon the subject as was that writer.

The White-tailed Eagle is not found in any part of America, its place there being taken by the well-known White-headed Eagle (*Haliæetus leucocephalus*),* but it is very common in Greenland, remaining throughout the year, according to Professor Reinhardt, in the Southern districts, though migrating from the Northern parts in winter. It also inhabits Iceland, where it is resident, but, owing to the price set upon its head, is not so common as formerly. In the Færo Isles, according to Herr H. C. Müller, it still occurs, but no longer breeds. It is spread over the continent of Europe, very generally in the neighbourhood of water, from the extreme north of Norway to Spain, Sicily and Greece, but becomes rarer towards the South, though it breeds in Albania, as recorded by Lord Lilford. In Algeria it only occurs accidentally, but it resides in Lower Egypt, according to Dr. von Heuglin, who describes a nest he saw in the thick reed-beds of Lake Menzaleh. Northward and eastward of the European localities mentioned, the White-tailed Eagle is abundant in some suitable places and ranges across the Russian dominions to Kamtchatka, where, however, Kittlitz states that it is not common. It occurs in the Aleutian Islands and in Japan, as well as on the adjacent coast of Manchuria, whence young birds, taken from a nest in Hornet Bay, were sent to Mr. Gurney. In China, Mr. Swinhoe believes that it visits Amoy, and in India two or three immature examples have been lately recognized by Mr. Jerdon; but its southern limits in the rest of Asia do not seem to have been defined. In the extreme north-east of that continent, and in the Aleutian Islands, *Haliæetus albicilla* is partly replaced by *H. pelagicus*, the largest Eagle known, which is distinguishable at a glance by its white thighs and upper wing-coverts. This species, rare in collections, is said to occur also in Japan, and on the American side of Behring's Strait.

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* This has been thought to occur in Europe, and even in Ireland (Zoologist, 1867, p. 562), but on no good evidence.

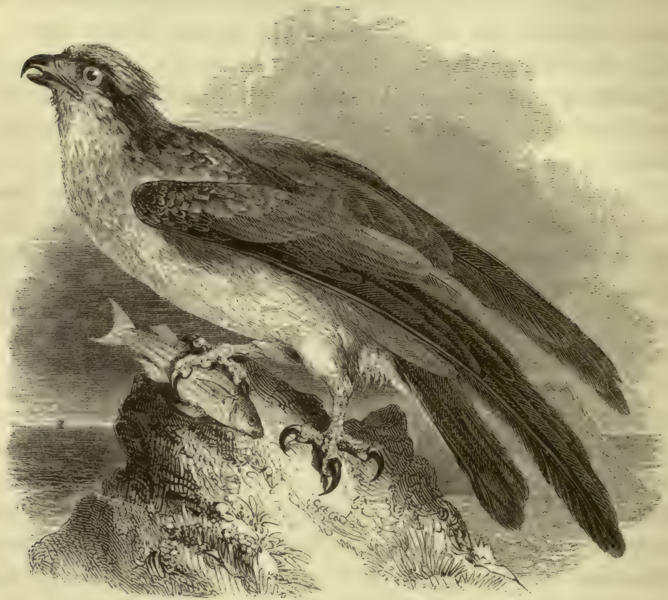
The eggs of the Sea-Eagle are, when fresh-laid, of a pure white, and measure from 3·14 to 2·7 by 2·4 to 2·19 in. The young are at first covered with white down. Instances are on record of occupied nests being placed very close together, even in the British Islands, and in Œland Messrs. Wolley and Hudleston found five within a circuit of two miles.

The whole length of an adult male is about twenty-eight inches; the females are five or six inches longer: the beak and cere are yellow, the irides straw-yellow; the head and neck brownish-ash (in very old birds extremely light), the shaft of each feather the darkest part; body and wings dark brown, intermixed with a few feathers of a lighter colour; primaries nearly black; tail entirely white, and slightly rounded in form, the middle feathers being the longest; the legs and toes yellow; the claws black.

In young birds the beak is black, the cere yellowish-brown, the irides brown; the plumage more uniform in colour, and darker; the tail-feathers dark brown. In this state it has been called by many authors *Falco ossifragus* (bone-breaker); but the term "Ossifrage", as used in the Old Testament, refers, according to Canon Tristram, to the Bearded Vulture or Lämmergeier (*Gypaetus barbatus*).

The representation of the White-tailed Eagle here given was taken from a specimen in the Gardens of the Zoological Society, which formerly possessed a very remarkable variety of this species taken in Ireland, and now in the Norwich Museum. This has the whole of its plumage of an uniform bluish-grey colour, and has been figured in Meyer's 'British Birds.' Mr. St. John also mentions an example of "a fine silvery white," and Mr. Robert Gray a pure white variety in the Museum at Dunrobin.

ACCIPITRES. *FALCONIDÆ.*



PANDION HALIÆETUS (Linnæus*).

THE OSPREY, OR FISHING HAWK.

Pandion haliæëtus.

PANDION, *Savigny*†.—Beak short, strong, rounded, and broad; cutting edge nearly straight. Nostrils oblong-oval, oblique. Wings long; second and third quill-feathers longest. Legs strong and muscular: tarsi short, covered with reticulated scales. Toes free, nearly equal; outer toe reversible; all armed with strong, curved, and sharp claws; under surface of the toes rough, and covered with small pointed scales. Feathers wanting the accessory plumule.

THIS bird, from its habit of feeding almost exclusively on fish, must be looked for near the sea-shore, or about rivers and large lakes which may be expected to afford a plentiful supply of the particular food it is known most to delight in. The manner in which the Osprey seeks and obtains its prey has been admirably described by ornithologists in America, where the bird is sufficiently numerous to afford excellent opportunities of observing its actions. On one island near the eastern extremity of Long Island, New York, three hundred nests were counted. The old birds were rearing their young close together, living as peaceably as so many Rooks, and were equally harmless towards other birds. "When looking out for its prey," says Sir John Richardson, "it sails with great ease and elegance, in undulating and curved lines, at a considerable altitude above the water, from whence it precipitates itself upon its quarry and bears it off in its claws; or it not unfrequently, on the fish moving to too great a depth, stops suddenly in its descent, and hovers for a few seconds in the air, like a Kite or a Kestrel, suspending itself in the same spot by a quick flapping of its wings; it then makes a second and, in general, unerring dart upon its prey, or regains the former altitude by an elegant spiral flight. It seizes the fish with its claws, sometimes scarcely appearing to dip its feet in the water, and at other times plunging entirely under the surface with force sufficient to throw up a considerable spray. It emerges again, however, so speedily, as to render it evident that it does not attack fish swimming at any great depth." Though this last remark is no doubt true, it may be observed that an instance came to Mr. Wolley's knowledge of an Osprey being caught in a fishing-net and drowned. Mr. Lloyd has recorded the same fate happening to one which had struck so large a fish that the bird was pulled under water; and Mr. Knox mentions a case in which the bird, having landed its prey, was unable to extricate its talons therefrom, and so fell a victim to the crook of a shepherd who had witnessed the capture.

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* *Falco haliætus*, Linnæus, Syst. Nat. Ed. 12, i. p. 129 (1766).

† Système des Oiseaux de l'Égypte et de la Syrie, p. 9 (1810).

The versatility of the outer toe of the Osprey, the strength, curvature, and sharpness of its claws, and the roughness of the soles of its feet, are peculiarities of structure adapted to the better securing its slippery prey; and the shortness of its thigh-feathers, unusual in the Falcon tribe, is also evidently connected with its fishing habits. A bird in the Gardens of the Zoological Society of London, when a fish was given to it, was observed to seize it across the body, placing the inner and outer toes at right angles with the middle and hind toes, and digging in the claws, held the fish most firmly by four opposite points; not relaxing its hold or altering the position of the toes, but picking out the portions of flesh from between them with great dexterity.

The Osprey makes a large nest, sometimes on high trees, at others on rocky islets, or about old ruins in lakes. When thus placed, it is usually in the form of a truncated cone; the sticks composing it project very little beyond the sides, and are built up with turf and other compact materials; the summit is of moss, very flat and even, and the cavity occupies a comparatively small part of it. The eggs, usually three in number, are subject to great and beautiful variety in colour. Generally they are irregularly and boldly blotched, and spotted with rich reddish-brown, on a white or yellowish-white ground, but in many examples a secondary tint of violet or pale yellowish-red occurs, while occasionally the specimen is almost entirely suffused with a bright orange-red or purple. They vary in size also considerably, measuring from 2·68 to 2·17 by 1·94 to 1·64 inches, and one sent from Sweden by the late Mr. Wheelwright measures only 1·68 by 1·22 inches. They are generally hatched at the end of May or in June. During the period of incubation, the male watches near, catches fish for the female, and brings the food to the nest: she therefore seldom quits the eggs, and then only for a very short interval. The parents feed the young till they are fully able to provide for themselves, and have been seen to supply them with fish long after they had left the nest, and both were flying about on the wing together. The old birds rear but one brood in the year.

The Osprey does not winter in Great Britain, but at other seasons has been obtained in almost every maritime county, while it not unfrequently occurs as far inland as Oxfordshire and Shropshire. On the east and south coast of England not a year goes by but it is seen, and too often killed, on its passage in spring or fall. Mr. Stevenson remarks, that whereas not long ago in Norfolk it used to occur most generally at the latter season, it now appears most generally at the former, and he ascribes this change to the great destruction of the species in Scotland, which has of late years stopped the supply of young birds that would have been otherwise bred in that country and migrated southward in autumn. The spring visitants, which are usually birds of the preceding year, often protract their stay as late as June, but there is no well-authenticated instance of the Osprey having bred in this or any other part of England. In Christchurch Bay the bird is called the "Mullet-Hawk," and the figure of the bird here given represents it with a Grey Mullet under its foot.

In Scotland, Sir William Jardine, writing in 1832, said: "A pair or two may be found about most of the Highland lochs, where they fish, and, during the breeding season, build on the ruined towers so common on the edges or insulated rocks of these wild waters. The nest is an immense fabric of rotten sticks—

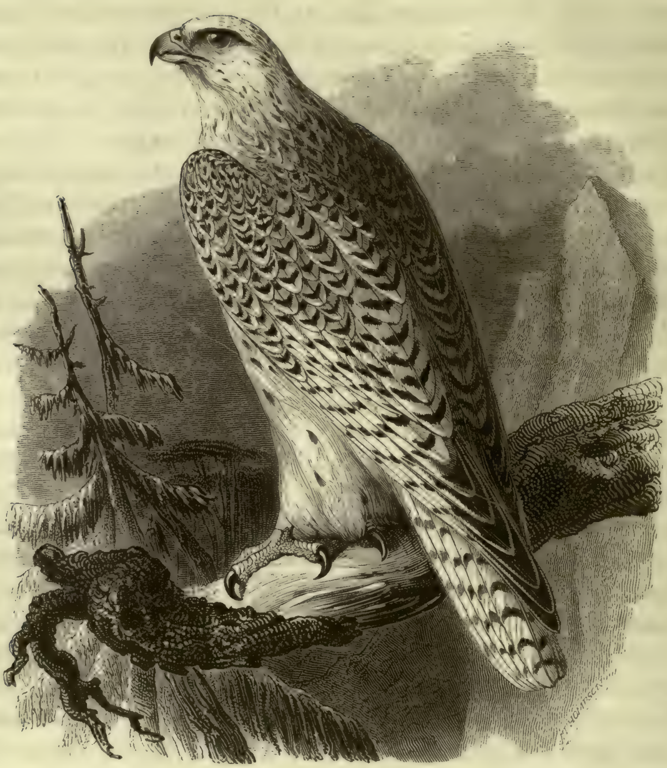
> Itself a burden for the tallest tree,

and is generally placed, if such exists, on the top of the chimney, and if this be wanting, on the highest summit of the building. An aged tree may sometimes be chosen, but ruins are always preferred, if near. They have the same propensity of returning to an old station with those of America; and if one is shot, a mate is soon found, and brought to the ancient abode. Loch Lomond, Loch Awe and Killchurn Castle, and Loch Menteith, have been long breeding-places." All this is now changed. Twenty years since, between 1849 and 1851, Mr. Wolley found that, owing to the destruction of their occupants, most of the breeding-places named by former observers were deserted; the only exceptions being a few nests, in the northern counties of Sutherland and Inverness, described by Mr. St. John, in visiting one of which Mr. Wolley nearly lost his life. Some years passed, and it came to be believed among naturalists that the Osprey as a native bird had been thoroughly rooted out; but, in 'The Ibis' for 1865, Mr.

Rocke stated that the species bred every year in Inverness, whence Lord Hill had several times received the young, but finding it impossible to rear them, he had requested that in future they might not be disturbed. About this time also information reached Mr. Joseph Wolf, the accomplished zoological artist, that a second spot in another quarter was still tenanted; and lately Mr. Robert Gray has announced that in 1867 there were three or four strictly protected breeding stations in Ross-shire, and that he has authority for believing that one in the south-west of the kingdom is yet used. It thus appears that there is still a sufficient number left to stock the whole of Scotland, and it may be hoped that the efforts of those who are anxious for this species to retain its rank as a native of our island will meet with success.

In Ireland, in the Hebrides, Orkneys, and Shetlands, the Osprey seems to have never occurred but as an accidental stranger. It does not visit either Iceland or Greenland, but there are comparatively few parts of the globe in which it is not found; for, though many ornithologists have described the "Fish-Hawks" of America and Australia as distinct, under the names respectively of *Pandion carolinensis* and *P. leucocephalus*, Professor Schlegel and Mr. Gurney have recorded their opinion (in which they have been followed by authorities so high as Drs. Hartlaub and Finsch), that there is but one and the same species all the world over, and on this view it seems that the Osprey is the most cosmopolitan of the birds-of-prey. It is abundant throughout North America southward, from lat. 60°, and breeds on the Cays of Honduras; it yearly visits the West Indies, and is recorded from Brazil by Prince Max and Natterer—the last of whom met with it so far in the interior as the middle of the province of Mato Grosso. Mr. Gurney considers examples from the Atlantic side of the continent to be larger than those from elsewhere, and adds, that one of the smallest he has seen is from Nootka Sound. It occurs in some only of the islands of the Pacific (the Isle of Pines and the Exchequer group, for example), and not at all in New Zealand; but in Tasmania Mr. Gould says he himself shot it in Recherche Bay, at the extreme south of that island, though, in his opinion, the bird which is found there and in Australia is specifically distinct—the *P. leucocephalus* just mentioned. He further states that Mr. Gilbert discovered it breeding at Swan River and at Port Essington. Thence it extends northward to New Guinea, where that enterprising and philosophical naturalist Mr. Wallace obtained it, and to most if not all of the islands of the Malay and Indian Archipelagos—Ceram, Celebes, Borneo, and Java. It has not been recorded from the Philippines, but Mr. Swinhoe says it is abundant in Formosa, and it is met with in Japan. So far as our knowledge is at all complete, it extends throughout the continent of Asia, and in India it is spread, according to Mr. Jerdon, all over the country, and breeds there. It is also generally dispersed throughout Africa, from Natal northwards, along both east and west coasts, and the course of the larger rivers. Dr. von Heuglin found it breeding on the Dahalak islets in the Red Sea. Returning to Europe, it occupies every suitable station from Greece and Spain, where it breeds—sometimes on sea-cliffs, as at Gibraltar,—to Lapland.

The Osprey measures about twenty-two inches in length. The beak is black, the cere blue, the irides yellow; the top of the head and nape of the neck whitish, streaked with dark brown, the feathers elongated. The upper surface of the body and wings dark brown, often with a purple gloss; the ends of the primaries black; the upper surface of the tail waved with two shades of brown; the chin and throat white; across the upper part of the breast a light brown band. The belly, thighs, and under tail-coverts, white; under surface of the wing white at the axilla, brown on the outer edge; under surface of the primaries dark brown, the shafts white; under surface of the tail barred with greyish-brown on a white ground: the legs and toes blue; the toes partly reticulated, but with a few broad scales near the end, their under surface covered with short, sharp spines: claws long, all of nearly uniform length, and solid,—that is, not grooved underneath; their colour black.



FALCO CANDICANS, J. F. Gmelin*.

THE GREENLAND FALCON.

Falco gyrfalco (in part)†.

FALCO, *Linnæus*‡.—Beak short, curved from its base; on each cutting edge of the upper mandible a strong projecting tooth. Legs robust; tarsi short: toes long, strong, armed with curved and sharp claws. Wings long and pointed; the first and third quill-feathers of equal length, the second quill-feather the longest.

No question in ornithology perhaps has been so much discussed as that which relates to the large Falcons inhabiting the northern parts of the globe. By the majority of naturalists they have been regarded as forming a single species, but of late years there has been a growing tendency to recognize first two and then three distinct species or races—according as the idea of what constitutes a species or a race is entertained by the individual writer. It is now proposed to consider these three forms (two of which have many times occurred in the British Islands) separately, and it is hoped that the distinctive characters of each can be set forth with sufficient clearness. In the former editions of this work, all three were treated as one species under the name of "Gyr-Falcon"—a name properly belonging only to that form, which, though frequenting countries not far removed from the United Kingdom, does not appear to have been as yet taken within its limits.

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* Syst. Nat. i. p. 275 (1788).

† Not *Falco gyrfalco*, Linnæus.

‡ Syst. Nat. Ed. 12, i. p. 124 (1766).

In Gmelin's edition of Linnæus's celebrated 'Systema Naturæ,' these three large northern Falcons are as sufficiently defined as many other birds about which no doubt has ever arisen, though Gmelin did his best to complicate the matter by misapplying some of the names and descriptions of other authors in the case of two of them, and while giving to each the rank of a species, ingeniously made it also a variety of the other. It is the first and third of these three species, as they stand in his work, which require especial attention in a 'History of British Birds.' The second may for the moment be dismissed with the remark that it is undoubtedly the real *Falco gyrfalco* described by Linnæus as a Swedish bird, and the true Gyr-Falcon of falconers. It is the third of Gmelin's species, *F. candicans*, since named by Mr. John Hancock *F. grœnlandicus*, which is the subject of the present article. Though this form has been always clearly distinguished by falconers from the other two, much confusion respecting them has been caused by the imperfect knowledge of older writers, which it would be a hard task, if indeed at all possible, to unravel. Of later authors, Pastor Brehm, in 1823, seems to have been the first who decidedly distinguished between the two Falcons which have been presumed to have their respective homes mainly, though not, as will presently be seen, exclusively, in Greenland and Iceland. In 1838, Mr. Hancock brought the matter before the British Association, at its meeting at Newcastle-on-Tyne; but in the paper which he then read (Annals of Natural History, ii. p. 241), he was led, as Brehm before him had been, into the error of confounding the adult of the Greenland bird with the young, and of describing this latter as being brown like the immature Icelander. It was the confusion arising from this misconception which most probably hindered his views from meeting with more general acceptance; and it was not until 1854 that he was able to correct himself, but in that year he announced (Ann. and Mag. of Nat. Hist. 2nd Ser. xiii. p. 110) that the Greenland Falcon was never in any stage dark-coloured, but invariably light-coloured from its youth. This opinion was grounded upon repeated observations of living birds, backed by the inspection of more than one hundred and fifty prepared specimens, and a careful comparison of no less than seventy. Mr. Hancock's latter paper seems to have been for some time much overlooked by ornithologists, and hence the erroneous notions previously existing still retain their sway in some quarters. Of late, however, Professor Schlegel, Mr. Gurney and Mr. Gould, among others, have adopted Mr. Hancock's present opinions, which it may be added are strictly in accordance with the traditions of falconers, and to him, therefore, belongs the credit of first discovering and making public the exact state of the case.

It is to be observed that nearly all the true Falcons, as can be proved by keeping them in captivity, assume the plumage of maturity at their first moult, which usually takes place when the birds are from nine to fifteen months old; and, moreover, that the feathers of the young are generally characterized by longitudinal markings, while those of the adult have most of the markings disposed transversely. After this one change, there is no good reason for supposing that the colours of the plumage materially alter at any succeeding moult. The feathers become faded or bleached with time, but they are thrown off every year, and fresh ones take their place, the same in colour and markings as those originally assumed by the bird at its first moult. This has been observed in several instances to be the case with the Greenland Falcon. The adult so beautifully figured by Mr. Wolf in the 'Zoological Sketches' (plate 34), when brought to the Zoological Gardens, was said to have been taken in Greenland the same year. Its plumage then had the longitudinal markings of immaturity which at the first moult changed into the transverse ones represented in the plate, and though the bird lived for several years afterwards, and regularly underwent its annual moult, Mr. Wolf, who watched it carefully, and from time to time sketched it, was convinced that no further alteration in colour took place.

Prior to Mr. Hancock's discovery of this fact, it had been thought by him and others that the young of the Greenland Falcon was of a dark colour, and resembled the young of the Iceland Falcon, next to be described, and all the white Falcons, whether marked longitudinally or transversely, were believed to be adult. But this error being corrected, and the mode of determining the young as well as the old of each form being established, it was not difficult to point out the characters which distinguish the two at any age. The most apparent of these may be briefly stated to lie in the bills and claws of the Greenland bird being in life of a very pale hue, while in the Icelander the same parts are more or less of a dusky horn-colour; and, as regards the plumage, the white in the Greenland Falcon being as it were the ground-colour of each feather on which the dark marking, if one exist, is displayed, the ground in the other form being dark with a light marking thereon. In other words, in the Greenland bird, at all ages, the prevailing colour is white, while in the Icelander it is dark—being brown or grey according as the example is young or old.

The Greenland Falcon seems to be most plentiful in the inhospitable regions which enclose Baffin's Bay and extend to the westward. From this tract adult birds seldom wander to other lands, though the young, especially in autumn and winter, occur regularly in Iceland, and not unfrequently in the Dominion of Canada, from Newfoundland (where, according to Mr. Reeks, it is a pretty regular visitant in the fall) westward, the United States, the British Islands, and even in countries still more remote from the place of their birth. They are, no doubt, driven away by their parents, as is commonly the habit of birds-of-prey, and follow the large flocks of water-fowl, which are bred in the north, on their southward migration, though it would appear that the Ptarmigan forms the chief sustenance of the old birds. At the same time, it must not be supposed that in Greenland the white form only is found. In the southern districts of that country, the Iceland Falcon is certainly more numerous, and, on the other hand, there is good reason for believing that the Greenland Falcon breeds in some of the northern parts of British America, and perhaps even in the Old World. Writing of what was doubtless this form of Falcon, Sir John Richardson, in the 'Fauna Boreali-Americana,' says:—

"In the middle of June, 1821, a pair of these birds attacked me as I was climbing in the vicinity of their nest, which was built on a lofty precipice on the borders of Point Lake, in latitude 65½°. They flew in circles, uttering loud and harsh screams, and alternately stooping with such velocity, that their motion through the air produced a loud rushing noise; they struck their claws within an inch or two of my head. I endeavoured, by keeping the barrel of my gun close to my cheek, and suddenly elevating its muzzle when they were in the act of striking, to ascertain whether they had the power of instantaneously changing the direction of their rapid course, and found that they invariably rose above the obstacle with the quickness of thought, showing equal acuteness of vision and power of motion. Although their flight was much more rapid, they bore considerable resemblance to the Snowy Owl."

Sir John also remarks that at the season at which he saw them, the ground was still partially covered with snow and the lakes with ice, but that this bird, like the Owl just mentioned, is well adapted, "from the whiteness of its plumage, for traversing a snowy waste without alarming the birds on which it preys," and further, that when the Falcon "pounces down upon a flock of Ptarmigan, the latter endeavour to save themselves by diving instantly into the loose snow, and making their way beneath it to a considerable distance."

Midway between Asia and America, this white Falcon was seen at sea a little north of Behring's Island by Mr. Bannister. Crossing the Pacific, it is, according to Professor Schlegel, known to the Japanese; and it certainly occurs on the continent of Asia, though whether its character in Siberia is that of a native or visitor only, there is not at present enough evidence to decide. A specimen obtained by Pallas is preserved in the Museum at Berlin, and, though regarded by some writers as an adult, is, according to the views here adopted, a bird of the year; and, if that be the case, the question of its origin is left undecided. Dr. von Middendorff says that the large Falcons observed by him, even as high as lat. 75½° N., were always in dark plumage; and the same would seem to have been the case with those seen in South-eastern Siberia by Herr Radde, but the single specimen from the Amoor River described by Herr von Schrenck appears to have belonged to the Greenland form; and though his account leaves it questionable whether this example was adult or immature, it would seem to have been the latter. *Falco candicans* is said by Professor Eversmann to occur, though not commonly, on the Ural Mountains, but it may be open to doubt whether the bird he means be really the same as the subject of this article. Captain Salvin and Mr. Brodrick, in their 'Falconry in the British Islands,' state that they "have been informed by travellers, that some few large white Falcons, which must be Greenland Falcons, are caught annually in their passage over the Caspian Sea, and that they are highly prized by the falconers of Syria and Persia."

It has been already said that this Falcon occurs yearly in Iceland, but it does not breed there; and the only instance on record of its having been seen in that island in summer is that mentioned by Herr Preyer in the narrative of his travels. It has very probably occurred on the continent of Europe, but, owing to the way in which it has been confounded with the cognate forms, the point cannot at present be decided. The same confusion renders useless many of the records of the appearance of large Falcons in the United Kingdom; but the following seem trustworthy as referring to the subject of this article.

The young bird from which the figure here given was taken, was shot in Pembrokeshire in a warren belonging to Lord Cawdor, and by him presented to the Zoological Society, whence it passed to the British Museum, where it now is. It had been observed, says Mr. Tracey (Zoologist, p. 2639), by his father for eight or ten days before it was killed. A specimen taken at Port Eliot, in Cornwall, and now in the collection of Mr. Rodd, as stated in the second edition of his 'List of British Birds' (but said by Mr. Brooking Rowe to be the example whose occurrence on the Lynher, in February, 1834, was mentioned by Dr. Edward Moore) is believed by Mr. Rodd to be of this form, as is probably one obtained at the Lizard, and also recorded by him. Hunt, in his 'British Ornithology,' has figured an example taken alive on Bungay Common in Suffolk, some sixty years since, but from its tameness it had possibly escaped from a falconer. In Norfolk one was killed, according to Mr. Stevenson, in February, 1848, near Cromer, and other large white Falcons have been seen in that county, as well as in Suffolk. In Yorkshire, there is Mr. Hancock's excellent authority for the occurrence of one, which was wounded near York in February, 1837, and kept alive for some time by Mr. Allis; and Mr. Roberts has recorded (Zool., p. 4558) one which was killed in Robin Hood's Bay, in November, 1854. A young male killed in Islay, in February, 1838, has come under Mr. Hancock's inspection, but at least four are mentioned by Mr. Robert Gray, in his work, as having been killed of late years in the Hebrides; while two more have, on the same authority, occurred in other parts of Scotland—one in Lanarkshire in 1835, and the other, an immature male, now in Mr. Newcome's collection, in Perthshire in the spring of 1862. The example described and figured in Pennant's 'British Zoology,' was said to have been shot near Aberdeen, and the engraving shows it to have been a young bird. Messrs. F. H. Salvin and Brodrick, in their work before cited, also state that on two occasions, about 1840, a large white Falcon was seen in Ross-shire, and that in 1850 Messrs. St. John and Hancock saw a Greenland Falcon near Elgin. On the 3rd of March, 1866, according to Dr. Saxby (Zool.s.s. p. 288), a female was shot on Balta, one of the Shetlands, and this example is now in the collection of Mr. J. H. Gurney, Junior. In Ireland, Thompson mentions one killed more than thirty years since in Donegal, and subsequently a second, shot at Drumboe Castle in the same county. Mr. Blake-Knox has recorded a third Irish specimen, which is in the Museum of the Dublin Natural History Society, and appears to have been killed in the winter of 1862–3.

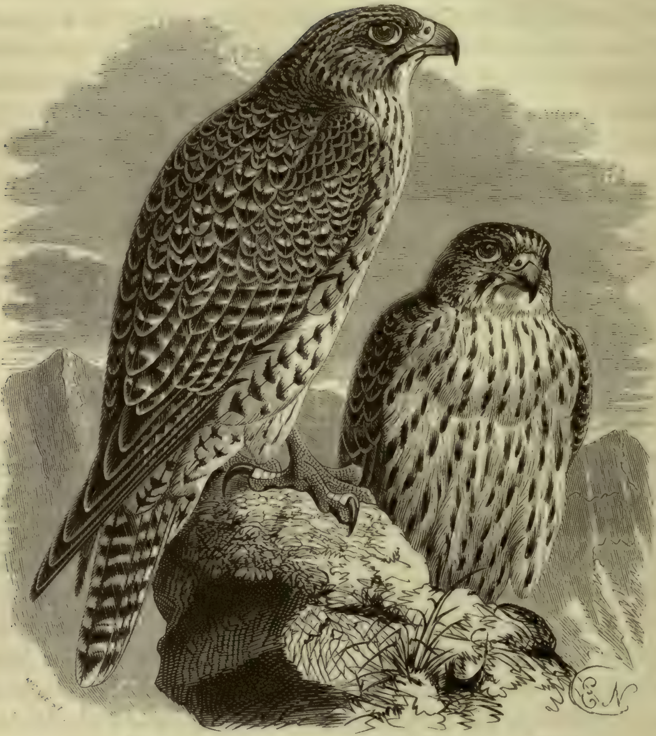
Little is known of the nidification of this Falcon, but it probably does not differ much in this respect from the bird next to be described. Holböll, who was for some years Governor of the Danish settlements in Greenland, states that he never saw but one breeding pair of white Falcons, and the only large Falcon's nest he took evidently belonged to the Iceland form, or, at any rate, to that race of it which inhabits South Greenland. Three eggs obtained through him, however, and marked as those of the white bird, are in the collection formed by the late Mr. Wolley, and measure from 2·27 to 2·12 by 1·83 to 1·75 in. They are suffused with pale reddish-orange, having a few spots of a darker orange-brown or dull red, or are mottled with pale brownish-orange on a white ground.

So much has been written concerning Falconry, that it need not be dwelt upon here at any length. No birds were more eagerly sought and more highly prized by the followers of that now nearly obsolete sport than the Greenland Falcons captured in Iceland, and sent thence to the potentates of Norway and Denmark. The preference accorded to these white birds is of very ancient date, for Professor Schlegel, in his 'Traité de Fauconnerie,'—at once the most learned and most magnificent of the many works relating to the subject—quotes (p. 77) from Madox's 'History of the Exchequer' (London: 1701, p. 186) a passage to the effect that in the fifth year of King Stephen's reign, about 1139, one Outi of Lincoln had to pay a fine of one hundred Norwegian Hawks, and one hundred "Girfals," of which last it was stipulated that six were to be white; and later, as appears from several passages in Rymer's 'Fœdera' (Londini: 1705, pp. 1071, 1075, and 1087), Norwegian and white Falcons formed royal gifts. Thus, in 1279, Magnus King of Norway writing from Bergen to Edward I., sends him "aliquos Gerofalcones;" and this same Magnus on his death-bed, in 1280, left his sons to Edward's care, accompanying the bequest with a present of two noble white Falcons and six grey ones. While King Edward, in 1282, writing to Alphonso of Castille, transmits him four grey Falcons, of which two were trained to Cranes and Herons, and apologizes for sending no white ones, having lately lost nine, but adds that messengers had already gone to fetch some more from Norway, of which he himself would by-and-bye be the bearer. In the last century, we learn from Horrebow that the falconers of the King of Denmark, who were annually despatched to Iceland, paid the natives who caught the birds from twice to three times as much for white as for grey ones. This same writer also mentions that "in winter whole flights of Falcons come over from Greenland [to Iceland] and are chiefly white." The adult specimen of the Greenland Falcon, now in the Museum of Newcastle-on-Tyne, from which Bewick's woodcut was drawn, was given to Mr. Tunstall by the then Lord Orford, a great falconer, who obtained it from Iceland or Greenland, and had used it for many years in taking Hares and Rabbits; but these large Falcons were most valued for flights at Cranes and Herons.

The preceding remarks on the different characters of the Greenland and Iceland Falcons render any minute description of the former unnecessary; but it should be observed that in both forms the plumage is subject to great variation in markings and tint, and this variation is, subject to the rules already laid down, not dependent upon age. The young of the Greenland Falcon is more or less white, like the adult; but the old birds always have the upper surface to a greater or less extent adorned with heart-shaped spots or transverse blotches of black or very dark slate-colour, and these sometimes approach each other so nearly as to form bands. The head is pure white or only slightly streaked. Beneath, the markings are less numerous than above, and the under tail-coverts are spotless.

In the first plumage, the dark markings are commonly of a paler colour, being blackish-brown of a deeper or lighter shade; and these, on the body-feathers generally, instead of being transverse or heart-shaped, are longitudinal or tear-shaped. When they take this last form, the birds are of singular beauty. In both young and old the flight-feathers of the wings and tail are ordinarily barred, but the latter are often entirely white. A very large series of examples may be compared without finding two which are exactly similar, and there can be little doubt that the bird which is sparsely marked in its youth will be as sparsely marked when old; while, on the other hand, the closely-marked young will remain as closely marked when adult—a rule which holds equally good in the Iceland Falcon, where the dark or light complexion is permanent. The cere, orbits and feet are of a pale yellow in the adult Greenland Falcon, and light bluish-grey in the young. The irides, as are those of all the true Falcons (except as a rare individual peculiarity), are dark.

The specimen here figured measured twenty-three inches from the point of the beak to the end of the tail; the wing, from the carpal joint to the lip, is about fifteen inches.



Falco islandus, J. F. Gmelin*.

THE ICELAND FALCON.

Falco gyrfalco (in part)†.

The chief differences between the subject of the preceding article and the Iceland Falcon have therein been succinctly mentioned. It remains to point out the characters which distinguish the latter from the true Gyr-Falcon of the Scandinavian Peninsula, and probably of countries further to the eastward. In immature plumage the two birds greatly resemble each other, so much so, that it is often not easy at first sight to separate them, especially as the Icelander, like the Greenland Falcon, is subject to a considerable amount of variety in the prevailing shade of tint, and it is quite possible that examples of the true Gyr-Falcon have occurred in these islands, and have been mistaken for the commoner form. As a rule, however, it may be asserted that in the Iceland Falcon the crown of the head is lighter, and generally much lighter, in colour than the back, while in the Gyr-Falcon the crown of the head and the back are of the same hue, or the former is darker. In the Gyr-Falcon, also, there is commonly a very perceptible black mystacial streak or patch, which in adults of this form is often as much developed as we find it in the Common or Peregrine Falcon, and the coloration generally is darker than in the Icelander. The late Mr. Hoy, who was well versed in Falconry, and seems to have been the first English writer to clearly distinguish the two forms, has pointed out (Mag. Nat. Hist. vi. p. 108) some other differences. The Icelander, he says, rather exceeds the Gyr-Falcon of Norway in size; the tail is considerably shorter; the wings are, in proportion, longer, and the head is larger, so much so, that, in modelling the hoods for trained birds of the two kinds, falconers use different blocks. Whether all these distinctive features can be established on the comparison of a large series of specimens, is perhaps uncertain, but it does appear that in some parts at least of the structure of the two forms there exists a remarkable difference of proportion, which does not seem to have been hitherto noticed. The average length of the sternum and coracoid in *Falco islandus*, as ascertained by the careful measurement of six female specimens, not specially selected for the purpose, in the Museum of the University of Cambridge, is 5·46861 in., while the average length of the same bones in as many specimens of *F. gyrfalco* of the same sex, and in the same Museum, is 5·06383 in. This would at once show that the Icelander has the longer body of the two, by nearly half an inch; but the difference becomes more striking when it is found that the breadth of the sternal apparatus does not vary in accordance with its length, being occasionally absolutely broadest in the Gyr-Falcon; and, further, that the disproportion is chiefly caused by the elongation of the coracoid bones in the Icelander, where the sternum alone has an average length of 3·65608 in., against 3·47143 in. in the true Gyr-Falcon.

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* Syst. Nat. i. p. 271 (1788).

† Not *Falco gyrfalco*, Linnæus.

As a constant inhabitant of Europe, the Iceland Falcon is only known in the island whence it takes its name, and is there by no means uncommon, breeding in precipitous cliffs or ranges of rock bordering the numerous lakes, which are thronged during the summer by innumerable water-fowl, and thereby securing a plentiful supply of food for its offspring, though it is stated that Ptarmigans form the chief prey of the adults, and such of the young as pass the winter in that country, when it is comparatively deserted by aquatic birds. Most of the young, however, wander southward at that season, and examples annually visit the Færoes, Norway, Denmark, Germany, and Holland. In the British Islands, more probably have occurred than is the case with the Greenland Falcon, but of the many so-called "Gyr-Falcons" recorded as seen or taken here, the number which can be with certainty determined to be Icelanders is perhaps rather fewer—possibly the less conspicuous plumage of the latter does not attract so much attention.

In the Shetlands, Dr. Saxby states that though formerly a regular visitor, it is now only occasionally seen. Mr. Robert Gray says that, between 1835 and 1851, several were shot in the northern counties of Scotland, and that within the last four years he is satisfied that four or five have been killed in the western parts of that kingdom. An Iceland Falcon, which had for some time haunted a farm-yard, preying on the poultry, was shot on Vallay, one of the outer Hebrides, in September, 1865. This bird is in the collection of Dr. Dewar of Glasgow. Another, a fine male, was shot in the October of the preceding year in North Uist, and a third was about the same time washed ashore on the west side of that island. Mr. Gray also learned from Mr. Elwes that a fourth was shot on Islay, and mentions one that was trapped in

1866 at Glendaruel, in Argyllshire. As regards England, Thompson quotes from a letter of Mr. Hancock's the occurrence of a young bird at Bellingham, on the North Tyne, in January, 1845, which was then in the collection of Mr. Charles Adamson of Newcastle; and this capture is also recorded by Mr. Bold, in 'The Zoologist' for that year. The same letter also notices an Iceland Falcon, in its first plumage, killed at Normanby near Guisborough, in Yorkshire, in March, 1837, of which a brief description, by the late Mr. Hogg, appeared in the volume of the useful periodical just mentioned. Both these birds are now in Mr. Hancock's collection. Mr. Borrer possesses an adult Iceland Falcon shot at Mayfield, in Sussex, in January, 1845. These, with an immature specimen in the Norwich Museum, killed at Inverbroome, in Ross-shire, 1851—probably one of those already included by Mr. Gray—and a young male from Scotland, in the possession of Mr. Gurney, Junior, are all the British examples which at the present time can be, with any amount of certainty, referred to the Iceland Falcon.

This bird is believed to breed in Greenland, but only in the southern parts, and seems to be of not very rare occurrence along the coast of Labrador, where, according to Audubon, it breeds; but the examples figured as having been shot from their nests by him, are obviously immature, and not adult, as he and his party imagined. It is worthy of remark that many of the specimens obtained from Labrador are very dark in colour, but they seem to be always birds of the year. To judge from Richardson's account, it is not uncommon in the Fur-Countries, where it, as well as *Falco candicans*, probably breeds. On the western side of the continent, adults have been obtained in Alaska, where it is said by Mr. Dall to be resident, and usually confined to the mountains, breeding, according to Professor Spencer F. Baird, both there and on the Lower Mackenzie River indifferently on trees* and cliffs. The plumage of specimens from this territory transmitted by that naturalist to England for comparison, differs only from that of Icelandic examples in being slightly darker (Proc. Zool. Soc. 1870, p. 384); but the British Museum contains an immature specimen from Kotzebue Sound, which is as deeply coloured as the Labrador birds, and might at first sight be taken for a Gyr-Falcon. Whether *Falco islandus* crosses to Asia cannot be determined, for the dark examples seen by Dr. von Middendorff and Herr Radde in Siberia, and mentioned in the foregoing article, were at least as likely to have been the young of *Falco gyrfalco.*

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* In Lapland *Falco gyrfalco*, though usually breeding on cliffs, occasionally has its nest in a tree.—*Ootheca Wolleyana*, pp. 95, 96.

From information supplied to Mr. Hewitson by Mr. Proctor, the latter saw in northern Iceland several deserted nests of this Falcon, being too late to find any tenanted by the owners. This was in the beginning of August, and from one of them he took an addled egg. The nest was composed of sticks and roots, and lined with wool, much resembling that of a Raven, to which bird it might originally have belonged. Strewn around it lay the remains of many Whimbrels, Golden Plovers, Guillemots, and Ducks. All the nests he saw were in cliffs, forming the boundaries of freshwater lakes, but none of them so high in the mountains as he expected to have found them. A similar account of a nest, seen by him in 1821, is given by Faber. This, the only one he found, was in south-western Iceland. It was large and flat, placed on the upper part of an inaccessible wall of rock. There were three full-grown young, two of which, on the 6th of July, had already left it and sat near by. The old birds flew around screaming, but did not attack him. Remains of various species of sea-fowl lay about. Later in the year, Faber adds, both young and old approach the homesteads, where they sit on elevations, and often fight with the Ravens. Four seems to be the proper complement of eggs; they are suffused or closely freckled with reddish-orange or pale reddish-brown on a dull white ground, which commonly is hardly discernible between the markings, though these are sometimes collected into blotches of considerable extent. Specimens measure from 2·48 to 2·13, by from 1·91 to 1·72 in.

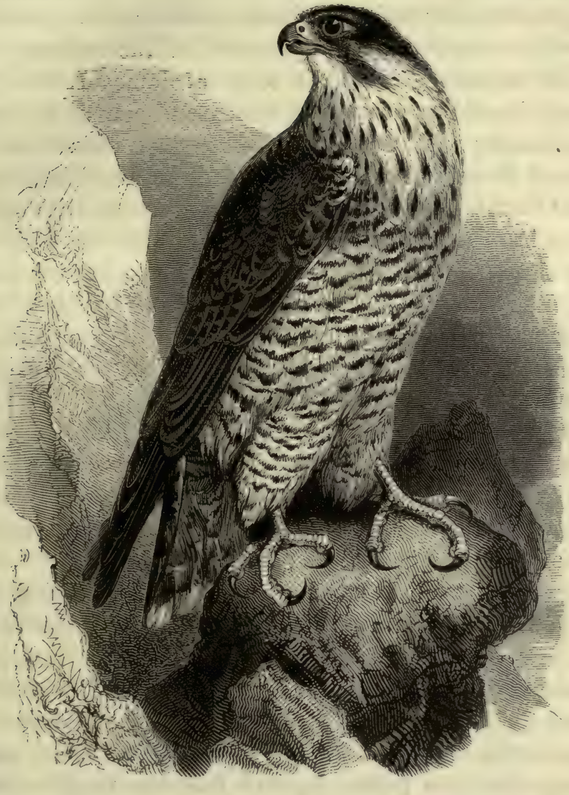
Modern falconers do not appear to value the Icelander so highly as did their predecessors. Still it is occasionally used at the present day, and mostly for catching Hares. Years ago it was much in vogue for taking the Kite, which often afforded excellent sport. When one of these birds was seen soaring aloft, an Owl, having a Fox's brush tied to its leg, was thrown up, whereon the Kite, imagining the Owl was carrying off a quarry, would descend, the Falcons were let go, and occasionally a flight of several miles in length followed.

In the adult Iceland Falcon, as represented by the front figure of the engraving, the crown and sides of the head and the nape are white, slightly tinged with ochreous, each feather having a greyish-brown longitudinal streak, sometimes so broad that the white is reduced to a narrow margin. There is generally more or less trace of a decided mystacial stripe, and the ear-coverts are darker than the rest of the head. The back, rump and wing-coverts are of a brownish-grey, each feather with a narrow border and one or more interrupted bands of dull white, which again are often freckled with a darker shade. The secondaries and tertials are very similar, but with a greater number of bands. The wing-quills are greyish-brown, mottled, especially on the inner webs, with dirty white in the form of imperfect bars. The tail, in like manner, is barred with greyish-brown, darker above and paler beneath, the light interspaces being often much freckled, and in these darker-coloured specimens the general aspect of the whole upper surface of the bird, from a little distance, is bluish. The under parts are of a more or less pure white, with a few linear streaks on the throat along the shaft of the feathers: these streaks increase both in number and breadth till they have the form of heart-shaped spots on the breast and sides. Some specimens have the flanks and abdomen similarly marked, but in others the spots again decrease in number and extent, and the under tail-coverts seem to be never unmarked. The bill is of a bluish horn-colour, darkest at the tip; the cere, orbits and feet are greenish-yellow, but some individuals seem never to attain this tint fully. The claws are of a dark horn-colour, almost black. The irides are dark.

The young, also figured in the woodcut, resemble the old as to the head, but up to the time of their first moult, the upper surface of the body is almost entirely devoid of the banded plumage which characterizes the plumage of maturity, and, except for the dirty or ochreous-white border of each feather, would be of an uniform dull brown. The quills are much the same as in the adult, but there is an entire absence of the bluish tinge. Beneath, the colouring is generally much darker than in the adult, each feather bearing a broad longitudinal mark of dark brown. The bill resembles that of the adult, but the cere, tarsi and feet are bluish-grey.

Examples of the Iceland Falcon are occasionally found showing a tendency to albinism, having perhaps two or three feathers on one side nearly pure white, while the corresponding ones on the other side are normal in their colouring. At other times the pied markings are more regularly disposed; and it was a specimen so diversified which led Mr. Hancock into the error, which he afterwards corrected as before mentioned.

The whole length of the adult female is about twenty-five inches; the wing, from the carpal joint, is over sixteen inches. The male is from twenty to twenty-one inches in length, with a wing of about fourteen inches.



FALCO PEREGRINUS, J. F. Gmelin*.

THE PEREGRINE FALCON.

Falco peregrinus.

THE great docility of the Common or Peregrine Falcon, and the comparative ease with which the birds are procured, has rendered them the most frequent objects of the falconer's care and tuition, and it is this species which is the most commonly used at the present day by those who still pursue the amusement of hawking. Formerly this diversion was the pride of the rich, and these birds, as well as their eggs, were preserved by various legislative enactments. So valuable were they considered when possessed of the various qualities most in request, that in the reign of James I. Sir Thomas Monson is said to have spent a thousand pounds in obtaining two Falcons; and a variety of interesting details as to the price of these and other Hawks, will be found in Mr. Harting's 'Ornithology of Shakespeare.' The qualities of a good Falcon have been so aptly described by Walton in his 'Complete Angler,' as addressed by Auceps to his companions, that, illustrating the powers and habits of the bird, the passage is here in part introduced. "In the air my noble, generous Falcon ascends to such a height, as the dull eyes of beasts and fish are not able to reach to: their bodies are too gross for such high elevation; but from which height, I can make her to descend by a word from my mouth, which she both knows and obeys, to accept of meat from my hand, to own me for her master, to go home with me, and be willing the next day to afford me the like recreation."

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* Syst. Nat. i. p. 272 (1788).

How much the former predilection for this particular sport has now subsided, is well known, and though it will doubtless for a long time number some votaries in these islands, the change which the face of the country has undergone during the last century—to say nothing of the improvement in fire-arms, renders it futile for any but the most sanguine to hope that the palmy days of Falconry may be restored. The flight of the Heron to his home, when the best opportunity is afforded to the falconer, is nowadays rendered uncertain and rare, through the complete drainage of wide tracts of land, and the larger heronries are in a great measure broken up and their inhabitants scattered. Failing the Heron, the Rook affords the best and surest sport, but Rook-hawking requires an open country, devoid of trees which may shelter the quarry, and the custom of planting has now become general, and has deprived many such a district of its former aptitude for the pursuit of this amusement. Yet the practice of Falconry is still far from being extinct with us, and in certain parts of all three of the United Kingdoms it is followed by gentlemen who are favoured by the localities in which they live. More than this, some of these enthusiastic sportsmen have achieved feats unknown to the falconers of old; for instance, the training of Peregrine Falcons reared in confinement from the nest to fly at and take Herons "on the passage" from their feeding-grounds to their homes, when in ancient days, as appears from old books, it was considered a sufficiently gallant exploit if a Heron roused from a river-bank were brought again "to soil," as it was termed, by a Falcon which had been reclaimed after it had developed and acquired full powers of flight by the enjoyment of complete liberty. This change in the system of Falconry has probably been due in a great measure to the employment of Dutch falconers, mostly from the village of Falconswaerd, or Valkenswaard, in North Brabant; but even their mode of training has been improved by our own countrymen. This village, says Sir John Sebright, writing in 1826, "has for many years furnished falconers to the rest of Europe. I have known many falconers in England, and in the service of different princes on the Continent, but I never met with one of them who was not a native of Falconswaerd." Those who wish to know more on this subject may with profit consult Professor Schlegel's elaborate monograph, before mentioned; it is enough to say now that falconers from this same place still direct several of the hawking establishments in Europe at the present day. It must not, however, be supposed that we are entirely devoid of native talent for Falconry; here and there throughout the country is found a lad or young man in whom its genius is strong, and in particular must be mentioned a Scottish family of the name of Barr, several members of which have evinced uncommon skill in the art.

In the language of Falconry, the female of this species is, exclusively, called the Falcon, and, on account of her greater size and power, is usually flown at Herons and Rooks: the male is called the Tiercel,* and corruptly Tassel, and is more frequently flown at Partridges, and sometimes at Magpies. The young of the year, on account of the red tinge of their plumage, are called, the female, a Red Falcon, and the male, a Red Tiercel, to distinguish them from those which have accomplished their first moult. Eyas, or Nyas, is the name of a young bird taken from the nest, as distinguished from the Peregrine or Passage-Hawk, a young bird caught during the season of migration; while Haggard is used for a bird caught after the first moult is completed, and reclaimed. If kept over a moult, they were then called Intermewed Hawks. The term Gentil Falcon seems to have often had a general rather than a particular meaning, and the bird so called by Pennant is certainly a Gos-Hawk, while the Lanner of the same author is a young female of the present species, at which age it bears some resemblance to the true Lanner, *Falco lanarius*, which probably has never been killed in this country.

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* This term, and its French equivalent *Tiercelet*, is commonly said to have its origin from the male being, as was supposed, one-third less than the female; but

Sir John Sebright, in his 'Observations on Hawking,' thus describes the mode of taking Herons:—"A well-stocked heronry in an open country is necessary for this sport, and this may be seen in the greatest perfection at Didlington in Norfolk, the seat of Colonel Wilson.* This heronry is situated on a river, with an open country on every side of it. The herons go out in the morning to rivers and ponds at a very considerable distance, in search of food, and return to the heronry towards the evening.

"It is at this time that the falconers place themselves in the open country, down wind of the heronry; so that when the herons are intercepted on their return home, they are obliged to fly against the wind to gain their place of retreat. When a heron passes, *a cast* (a couple) of hawks is let go. The heron disgorges his food when he finds that

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Professor Schlegel in his great work has shown this derivation to be an error, and the name appears to have been given from the old belief that each nest contained three young birds, of which two were females and the third and smallest a male.—*Traité de Fauconnerie*, p. 1, note.

* Subsequently Lord Berners. Didlington is now (1871) the property of Mr. Tyssen Amhurst, and the heronry, though its site is changed, still exists.

he is pursued, and endeavours to keep above the hawks by rising in the air; the hawks fly in a spiral direction to get above the heron, and thus the three birds frequently appear to be flying in different directions. The first hawk makes his stoop as soon as he gets above the heron, who evades it by a shift, and thus gives the second hawk time to get up and to stoop in his turn. In what is deemed a good flight, this is frequently repeated, and the three birds often mount to a great height in the air. When one of the hawks seizes his prey, the other soon *binds to him,* as it is termed, and buoyant from the motion of their wings, the three descend together to the ground with but little velocity. The falconer must lose no time in getting hold of the heron's neck when he is on the ground to prevent him from injuring the hawks. It is then, and not when he is in the air, that he will use his beak in his defence. Hawks have, indeed, sometimes, but very rarely, been hurt by striking against the heron's beak when stooping; but this has been purely by accident, and not (as has been said) by the heron's presenting his beak to his pursuer as a means of defence. When the heron flies down wind, he is seldom taken, the hawks are in great danger of being lost, and as the flight is in a straight line, it affords but little sport."*

Thompson, in his 'Birds of Ireland,' mentions that a Peregrine Falcon "having caught a landrail which it was about to eat on a house-top, instantly gave chase to another rail that was sprung, and, still retaining its first victim, secured the second with its other foot:—it bore off both together."

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* In illustration of the habit of the quarry to "take down wind," Mr. W. Aldis Wright, one of the editors of the 'Cambridge Shakespear,' has kindly supplied an explanation given him by a friend, no less ingenious than simple, of the often-quoted passage in 'Hamlet':—"I am but mad north-north-west: when the wind is southerly I know a Hawk from a Heronshaw." Hawking in the morning, under the old system the best time for sport, if the wind be from the north-west the birds fly so that any person watching them has the sun in his eyes, and is therefore not able easily to tell the Hawk from the Heron. When the wind is southerly the birds fly away from the sun, and any one can know which is which. Hamlet's application of the old saw was to show that his madness was much akin to other men's sanity.

So bold as well as rapid is the Peregrine Falcon, that it has frequently interfered and robbed the sportsman of his game in the manner described under the article "Golden Eagle," of which instances are related by Selby and others. But these daring birds are not always successful.

The Peregrine Falcon most generally has its nest in high and inaccessible cliffs, usually near the sea or lakes; but in one locality, in Lapland, Wolley found that it bred on the ground in a large marsh, and eggs from more than one nest in this situation were obtained by his collectors for several years.* Mr. Farman mentions its having its nest in a tree in Bulgaria; and that is its habit in Java, according to Professor Schlegel; instances also are known of church towers being occupied. The eggs are commonly four in number, and except that they are ordinarily of a much deeper colour, resemble those of the last species. Some are uniformly suffused with a brick-red, but a close freckling of dull crimson or deep orange-brown, with spots of a darker shade, is more prevalent. Occasionally a purplish hue is very perceptible, and sometimes the colouring matter is irregularly collected into large blotches, or only distributed at one end, leaving the rest of the surface with the pale yellowish-white ground exposed. They vary much in shape and size, measuring from 2·2 to 1·77 by 1·74 to 1·48 in. A nest in Sutherland, described by Wolley, was on a little platform, some four feet square, in a comparatively low rock with a good deal of vegetation, including ivy, upon it. The bare place for the nest was about eighteen inches across, and thereon were collected some little fragments of sticks and a multitude of birds' bones, with a few bones of sheep, probably brought to construct the nest with, and also many little bits of stone, apparently from the rock itself. The presence of birds' bones in or around the nest seems to be the rule, and upon the top of the cliffs near St. Abb's Head, where Selby visited a nest, he noticed, scattered in great profusion, the castings of the Falcons. Those examined were almost wholly composed of the bones and feathers of Gulls and other water-birds, but others were mixed with the feathers of Partridges and the bones of Rabbits and Leverets.

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* The persistency with which many birds-of-prey continue, during a long period of years, to use one spot for breeding is tolerably well known; but a very remarkable instance is recorded in the 'Ootheca Wolleyana' (p. 98). A Falcon's nest on a hill called Avasaxa in Finland is mentioned by the French astronomer Maupertuis, as having been observed by him in the year 1736. In 1799 it was rediscovered by Skjöldebrand and Acerbi. In 1853 Wolley found it tenanted, and, by examining the remains of a young bird lying in or near the nest, proved that it belonged to this species.

Falcons, and probably all birds-of-prey which feed on animals covered with feathers or fur, and thus swallow a quantity of indigestible matter, relieve themselves by throwing it up in the form of castings, which are oblong balls, consisting of the feathers or hair and bones forcibly compressed together. This habit of reproducing from the stomach the remains of the last meal is common to the Shrikes, the Swallows and most of the insectivorous birds which feed on *Coleoptera*, or those insects possessed of strong and hard external wing-cases. In like manner also the Crows, when they have been feeding upon corn, reject pellets consisting of the husks.

This species has been not inaptly termed *peregrinus*, since it has been found in very distant parts of the world; though the term was originally applied by the older authors to the young birds on their southward migration in autumn. In this country it still breeds, chiefly on the cliffs of the sea-coast throughout the south of England from Cornwall to Kent. Formerly there was annually a nest in the cliff at Hunstanton, and one in the steeple of Corton Church in Suffolk, and it is registered by Mr. More as breeding until a few years ago in the district of the Severn, where, indeed, it may possibly still be found as an occasional permanent inhabitant. On the coast of Wales, particularly in the south-west and north of the Principality, it may be regarded as breeding regularly; and again from Yorkshire northward to the Shetlands, but it is far more thinly scattered in the south than in the north of Great Britain, and is not at all unfrequent on the rocky headlands of the north and west coasts. In the mountainous parts of this island, the Peregrine Falcon is, however, by no means restricted to the neighbourhood of the sea, but breeds on sites in the interior, provided that they be sufficiently adapted from their impregnability and resources. The same was, if it is not now, the case in Ireland, where, according to Thompson, it inhabited suitable localities throughout the country, breeding in inland as well as marine cliffs. In the greater part of England, however, it is best known as a migrant most commonly met with in autumn, but occasionally wintering in some spot where abundance of food is obtainable. Such migrants are almost invariably birds of the year—real "Passage" or "Peregrine Hawks," in falconers' language; but in spring it is not very unusual for adults ("Haggards") to make their appearance, which would appear to be on their way northward, and after staying for a week or ten days resume their journey. Such a Falcon, remarkable for her extremely pale plumage, was known to the Editor for several years as haunting every spring for about that space of time a small plantation of old Scotch-firs at Icklingham in Suffolk, and during her stay she subsisted entirely on Stock-Doves, though the surrounding heaths abounded in Partridges. It may be that such a case is exceptional, but it is certain to every unprejudiced mind that the Peregrine Falcon, though without doubt at times destructive to game, is much less so than is supposed by those who only listen to the stories of their gamekeepers instead of observing facts for themselves. Indeed, there are strong grounds for believing that the presence of some Falcons or other birds-of-prey is absolutely beneficial to the interests of the game-preserver, since they unquestionably act as the sanitary police of Nature. On this subject Mr. Gage Earle Freeman, in his 'Falconry,' writes (p. 10):—"All hawks, when they have a choice, *invariably choose the easiest flight*. This fact is of the last importance in the matter before us: I confess I at once give it the chief place in this argument. Who has not heard of the grouse disease? It has been attributed, sometimes respectively and sometimes collectively to burnt heather; to heather poisoned from the dressings put on sheep; to the sheep themselves cropping the tender shoots and leaves of the plant, and thus destroying the grouse's food; to the tape-worm; to shot which has wounded but not killed; and perhaps to other things besides. It may be, I doubt not, correctly referred to any or to all of these. Of this, however, there appears no question, that, from whatever cause it spring, it is *propagated.* A diseased parent produces a diseased child. Now I say that when every hawk is killed upon a large manor, the balance of Nature is forgotten, or ignored; and that Nature will not overlook an insult. *She* would have kept her wilds healthy; destroy her appointed instruments, and beware of her revenge!"

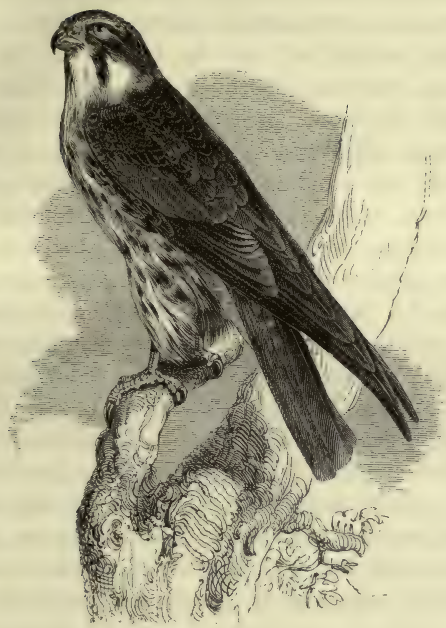
The Peregrine Falcon is found throughout Europe, with the exception of Spitsbergen and Iceland, and even in the latter there is a possibility of its accidental occurrence. Mr. Gillett believed that he saw this species in Nova Zembla (Ibis, 1870, p. 304). In northern Lapland, Wolley found it breeding higher in the mountains than *Falco gyrfalco.* It can be traced across Siberia, southward of lat. 64° N. to the Sea of Ochotsk, being, according to Dr. von Middendorff, a bird of the forest zone. It also occurs in Japan, and thence southward through China to Manilla, whence there is an example in the Norwich Museum. Motley obtained it in Borneo, and Horsfield gives it from Sumatra. The Leyden Museum contains specimens from Java, where, according to Professor Schlegel, it is rare, though it breeds in the island on trees (as has been said) and often preys on the Jungle-fowl. In this locality, in the Philippines, and in China, the true Peregrine Falcon meets the more southern form, *Falco melanogenys,* originally described from Australia, in which country it is universally distributed, and is distinguishable from the northern bird by the more ruddy tints and the closer barring of its lower plumage. In India, where two other nearly-allied forms, *F. peregrinator* and *F. atriceps,* also occur, *F. peregrinus* appears to be confined to the north-western parts; and though Mr. Hume considers that it probably breeds within the limits of that country, Mr. Jerdon is of the contrary opinion. This last ornithologist imagines that the statement of its breeding in Ceylon, made by Mr. Layard, has also arisen in error. De Filippi met with it in Persia, and Canon Tristram in Palestine, where he says that it occurs in suitable places at all times of the year. In Egypt it is a pretty common winter-visitant, according to Dr. von Heuglin, who states that it follows the course of the Nile to lat. 10° N. and thence extends into Kordofan and Abyssinia. Sir William Jardine has a specimen from Mozambique, and it has been recorded, but probably in error, from Madagascar. In South Africa it occurs, and the Norwich Museum contains specimens from Natal and the Cape Colony, but it is probably only an accidental visitor in this part of the world, where its place is occupied by *Falco minor*, a very distinct form. It does not seem to have been met with anywhere in West Africa, but was more than once observed by M. Bertholet in the Canaries. On the coast of North Africa it again appears, but in the interior of the country it is represented by *F. barbarus*. In America, it has long been a matter of doubt whether the Falcon, which there admittedly represents *F. peregrinus*, should be considered specifically distinct from it or not, and the birds from the eastern side of the country have been separated under the name of *F. anatum*, while those from the west have borne that of *F. nigriceps*; but of late the tendency on the part of the most competent judges has certainly been to unite the Common Falcon of the New World with that of the Old. It may be true that, as a rule, the eastern portion of the dominion of Canada and of the United States is inhabited by a bird which is generally larger and somewhat darker than that of Europe and Asia, and the western portion by a slightly smaller race still more deeply coloured, but the differences are by no means constant, and examples are to be found on either side of the Atlantic which entirely agree with each other. Under this view of the case, then, it may be said that the Peregrine Falcon inhabits suitable localities throughout the whole of the New World, from Port Kennedy, at the most northern point of the American continent (whence specimens not to be distinguished from English examples were brought by Dr. David Walker, the naturalist of the 'Fox' expedition), to Mendoza, in the territory of the Argentine Confederation. It may be observed, however, that in the western part of South America, Chili for instance, a Falcon is met with which is much allied to, if not identical with, the *F. melanogenys* before mentioned. In Greenland, the Peregrine Falcon not only occurs, but constantly breeds.

The whole length of an adult Peregrine Falcon is from fifteen to eighteen inches, depending on the sex of the bird. The beak is blue, approaching to black at the point; the cere and eyelids yellow, the irides dark hazel-brown; the top of the head, back of the neck, space below the eye and a broad mystacial patch, nearly black; the back, wing-coverts, and tail, bluish-slate or ash-colour, barred with a darker tint; the primaries brownish-black, the inner webs barred and spotted with rufous-white; the throat white, with dark longitudinal lines; the breast rufous-white, with dark brown transverse bars; the flanks, under tail-coverts, and the tail-feathers beneath, barred transversely with dark brown and greyish-white; legs and toes yellow, the claws black. The figure here given was taken from a very fine female of large size, in its second year, but still retaining one outer tail-feather of the first year on each side. The wing and tail-feathers are not changed in the *Falconidæ* in their first autumn.

The young, until the first moult, have the head and upper surface of the body and wing-coverts of a brownish ash-colour, the edge of each feather rufous; the under side of the body dirty-white, with dark longitudinal streaks; the tail with irregular reddish bars, the tip white. The cere and eyelids blue; the feet yellow. The first moult begins in April or May, and proceeds gradually through the summer.

This species presents very considerable individual variation, though perhaps not to the same extent as the preceding. The birds which are darkest in the immature plumage, are darkest also in the adult stage; while those which are of a light colour when young, are light when old. The feathers of the bird of the year are often strongly tinged, especially at the edges, with rufous; and some adults are extremely rufous beneath, others having scarcely a trace of the warmer colouring. There is a remarkable specimen in Mr. Newcome's collection, in which the belly, vent, and flanks are of a light blue-grey, with the usual dark bars. This was a bird which had been in training for some time. Occasionally, and most often in the young, the feet are of a light blue or grey. According to Professor Schlegel, the kind of food eaten by the birds makes a sensible difference in the tints of the plumage, the reddest being those which prey mostly on Ducks, or other fat water-fowl. It is, however, a well-known fact, that the greatest differences may often be seen in Eyasses from the same nest, brought up under the same conditions, and on the same diet.

Mr. W. G. Johnstone, in a communication to the 'Naturalist' for 1853, states that a pair of Peregrine Falcons, after having been kept in confinement for some years, not only laid two eggs, but continued to sit on them for twelve days, the male taking his share of duty. Being disturbed by strangers, the process of incubation was interrupted; but there was every reason to believe that young would have been produced from the assiduity displayed by the parent birds while they sat, and the fact that the eggs, on examination, proved to be fertile.



Falco subbuteo, Linnæus*.

THE HOBBY.

Falco subbuteo.

The Hobby, a true Falcon, though of small size, may be considered a Peregrine Falcon in miniature, but is rather less bulky in proportion to the whole length; the body of the bird being slender, the tail elongated, and the points of the wings reaching even beyond the tail. It sits like a Swallow, close to its perch, with its wings much crossed, and the carpal joints thrust out. In this country it is a summer visitor, appearing in April, and leaving again generally in October for warmer regions, like other summer visitors.

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[*] Syst. Nat. Ed. 12, i. p. 127 (1766).

Unlike the Peregrine Falcon, the Hobby appears to prefer inland situations among wooded and well-cultivated districts, and possessing considerable power of flight, as well as persevering endurance, can be trained to fly at Larks, Quails, and Snipes. Sebright says the Hobby will take small birds if thrown up by the hand, but is not strong enough to be efficient in the field. Montagu says he has "frequently witnessed the flight of this species in pursuit of a Sky-lark, which appears to be its favourite game; and it is astonishing to observe how dexterously the little bird avoids the fatal stroke until it becomes fatigued. A Hobby in pursuit of a Lark was joined by a Hen-Harrier, who not being so rapid on wing, was usually behind, and ready to avail himself of the sudden turns the unfortunate Lark was compelled to make to avoid the talons of the Hobby; however, after numberless evolutions, the Hen-Harrier relinquished further pursuit, being unequal to the chase, and left the deadly stroke to one better adapted for rapid and durable flight, and aerial evolutions." The Hobby has been known to dash through the open window of a room at a small bird confined in a cage, and is sometimes used by bird catchers to enable them by its presence, and by exhibiting it in a particular way, called "daring," to catch Sky-larks.

The Hobby, though a well-known bird, is not very numerous as a species. It chooses a high tree to make its nest on, occasionally taking to the remains of one of suitable size that has been deserted. The female lays three or four eggs, in colour much resembling those of the Iceland Falcon before described, and measuring from 1·72 to 1·5 by 1·32 to 1·21 in.

The localities to be quoted for the Hobby, shew that its distribution in England is somewhat like that of the Nightingale, though its habits lead it to take a wider range, and to disregard such very strict observance of limits. In Ireland there seems to be but two instances of its occurrence that can be trusted, one recorded by Thompson, and a second about three years since in Tipperary, the specimen being in the Museum of the Royal Dublin Society. It certainly does not breed in

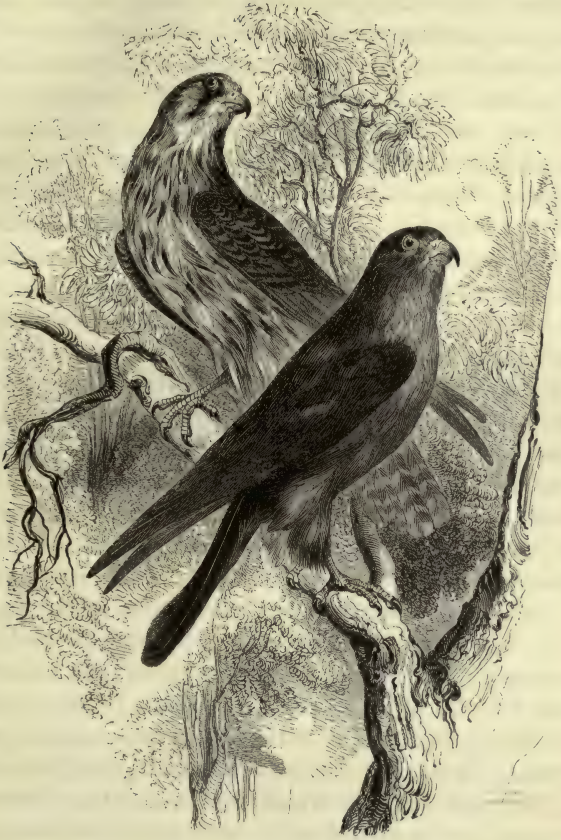
Wales. In Cornwall it is rare, according to Mr. Rodd, who only mentions two examples obtained in that county; while Dr. Bullmore, in his 'Cornish Fauna,' describes a third. In Devonshire, Dr. Moore and Mr. Brooking Rowe, in their catalogues of the birds of that county, have recorded two localities where it used formerly to breed; and Mr. Murray Mathew stated that there was a nest near Chagford in 1870. In Somerset, Mr. Cecil Smith says that it is a very rare bird. It does not seem to be much commoner in Dorset or Wilts; and thence Oxfordshire, Northamptonshire, and Lincolnshire seem to form the north-western frontier of the district in which it can be said usually to breed, though instances are known of its having done so in Nottinghamshire, Lincolnshire, and Yorkshire. In Scotland, according to Mr. Robert Gray, it has probably bred in the Isle of Arran, and though not a common species throughout that kingdom, its occurrence is now so frequent as to excite some surprise that it should have escaped the observation of many previous authors; and an example has been killed so far to the north as Caithness. In the parts of England south and east of the line indicated above, it would no doubt breed every year, were it unmolested.

The Hobby is an inhabitant of the continent of Europe generally, from Spain, where, though not numerous, it breeds, to Sweden. In June, 1867, Mr. Thomas Edward Buckley obtained a male bird at Jockmock in Lapland, just on the Arctic circle, and this would appear to be its most northern limit. In Finland, at least in the middle and south, it occurs, and thence, according to Pallas, extends across the Russian dominions to Kamtchatka. Southward of this, Mr. Swinhoe met with it at various places in China. In India, it is known as a common winter visitant to some parts of the Himalayas, but is rare in the plains, and probably does not breed in the country, where the allied *Falco severus* takes its place. Turning westward, De Filippi obtained it in June at Marend, in Western Persia. In Palestine, Canon Tristram mentions it as a rather late summer visitor. In Egypt it would seem to be not common, and to occur chiefly in winter. Dr. A. E. Brehm obtained it on the Blue Nile. Nothing seems to be known of it further south until we approach the extremity of the continent; but, though rare, it occurs in the Cape Colony, where it encounters another ally, the *Falco cuvieri*, which last seems to range along the western coast northward. *F. subbuteo* again appears in the Canaries, where, according to Dr. Carl Bolle, it is rare, though found in all the islands. Mr. Drake saw it at Cape Negro, in Morocco, and the Zoological Society formerly possessed specimens from Tangiers. In Algeria it is said, by Loche, to breed, but Canon Tristram and Mr. Salvin, the former of whom found it migratory in the desert and halting in the dayats, as if on its southward passage, are silent on that point.

The food of this species appears to consist less of birds than of coleopterous insects. The stomachs of two specimens examined by Mr. Henry Doubleday were filled with the common dung-chaffer, *Geotrupes stercorarius*.

Specimens of the Hobby measure from twelve to fourteen inches, depending on the sex. The male from which the figure was taken had the beak bluish horn-colour, darkest at the tip; the cere greenish-yellow, the irides dark brown; the top of the head, nape, back and upper wing-coverts, greyish-black; the edges of the feathers buffy-white; the primaries and secondaries nearly black, edged with dull white; the two middle tail-feathers uniform greyish-black, the others slightly barred with a lighter colour, the tips also lighter. The chin and side of the neck white; the cheek and moustache black; the breast and belly yellowish-white, with longitudinal patches of brownish-black; thighs, vent and under tail-coverts rust-red; under surface of the tail-feathers barred with dull white and greyish-black; the legs and toes yellow; the claws black.

Old birds have the upper surface of the body bluish-grey; in young birds the plumage is tinged with rufous.



Falco vespertinus, Linnæus*.

THE RED-FOOTED FALCON.

Falco rufipes†.

The Red-footed Falcon, or Orange-legged Hobby, is a species of small size, and so much in its general contour resembling the Hobby, that Buffon described and figured the adult male as a singular variety of that bird. The young female has more the appearance of a young Merlin. About twenty examples have been recorded of its occurrence in the British Islands since the year 1830, when four were killed in Norfolk (Mag. Nat. Hist. iv. p. 116). The majority of specimens have been obtained in the eastern or southern counties, as in that already named, Suffolk, Surrey, Kent, Sussex, Devon and Cornwall; but it has also been met with in Berkshire, Shropshire, Yorkshire, Durham and Northumberland. In Scotland two have been killed near Aberdeen, and in Ireland a single example in the county of Wicklow.

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* Syst. Nat. Ed. 12, i. p. 129 (1766). † Beseke, Vögel Kurlands, p. 20 (1792).

The geographical distribution of this species, so far as it can be determined at present, has been elaborately traced by Messrs. Sharpe and Dresser in their beautiful 'Birds of Europe,' and much information respecting its habits has also been compiled from various sources by those industrious authors. The Red-footed Falcon has been obtained some five times in Sweden. In Finland, where it had been previously known in a very few instances, it was, according to Dr. Malmgren, several times observed in the summer of 1869; and three examples were killed so far to the north as lat. 65°. It is common in the neighbourhood of Archangel, and eastward it ranges as far as the plains of Tunkinsk in Western Siberia, which appears to be its limit; since the bird, formerly confounded with this species, and found in Amoorland, China and India, is distinct, the *Falco amurensis*, the adult male of which possesses white, instead of lead-coloured under wing-coverts, while the female and young resemble more the common Hobby. *Falco vespertinus* has been shot at Trebizond, and Canon Tristram mentions it as a scarce summer-visitant in Palestine. It passes through Egypt in autumn and less frequently in spring; it may possibly occur further to the southward in Eastern Africa, but there *F. amurensis* reappears and extends to Natal. In Damaraland this last has been only known to occur once, while *F. vespertinus*, according to the late Mr. C. J. Andersson, arrives there during the wet season in incredible numbers; and further to the north, in Benguela, a large series of specimens was obtained and sent to Professor du Bocage at Lisbon. Loche obtained it in Algeria, but none of the English ornithologists who have visited that country seem to have met with it. It is not common in Spain and France, in the latter appearing only in some years, but then in flights.

Having thus traced the limits of the Red-footed Falcon, it remains to fill up the interval. In some parts of Italy it is said to be common, but only on passage; and Dr. Salvadori says that it has not bred there to his knowledge. It is most numerous in the eastern parts of Europe, in Greece, Turkey, Southern Russia and Hungary. In the country last named, Mr. A. H. Cochrane, as he states in a note contributed to the third edition of Mr. Hewitson's oological work, found it breeding, often in small societies, and taking possession of the nests of the Crow, Rook, or Magpie. It lays from four to six eggs, some of which, obtained by that gentleman, are blotched and mottled with two or three shades of light orange-brown on a yellowish-white ground, and measure from 1·37 to 1·47 by 1·13 to 1·16 in. In Central Germany it seems only to occur occasionally; but throughout the whole extent of its range, except perhaps in the Greek Archipelago, where Dr. Erhard says it winters, it would appear to be an essentially migratory species, visiting the north in spring and summer and the south at the other seasons. Its habits have been described at great length by Professor von Nordmann, as observed by him near Odessa, and his account of them has been translated by Messrs. Sharpe and Dresser in their work just mentioned. It arrives there at the beginning of April, often in astounding numbers, and for some time continues in flocks, the birds dispersing as the breeding season approaches, and reuniting in autumn before they leave the country. While they are in flocks, they indulge towards evening in very remarkable flights at a great height, pursuing very nearly the same course in a straight line to a certain point, and then turning back sharply to repeat the evolution. After some hours, the whole flock, as if at a given signal, goes suddenly to roost in parties of some twenty or thirty. Their food consists chiefly of orthopterous or neuropterous insects, which the birds seize with their feet when on the wing; but they also search on the ground for dung-beetles, and lizards occasionally form part of their diet, though they do not appear to prey on birds. Their cry resembles, says the same observer, that of the Kestrel, but is uttered less frequently.

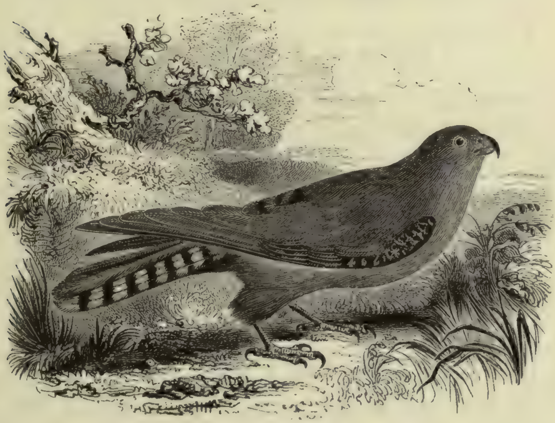
This species goes through several interesting changes of plumage, which are here described in detail. The upper figure in the engraving at the head of the article represents a young female; the lower one an adult male.

In the adult male, the base of the beak is yellowish-white, the other part dark horn-colour; the cere and eyelids reddish-orange, the irides dark brown; the head, neck, back, upper surface of the wings and tail, the throat, breast, belly, and under wing-coverts, of a uniform dark lead-colour; the thighs, vent and under tail-coverts, deep ferruginous; the legs and toes reddish flesh-colour; the claws yellowish-white, with dusky tips. The whole length of the bird eleven inches.

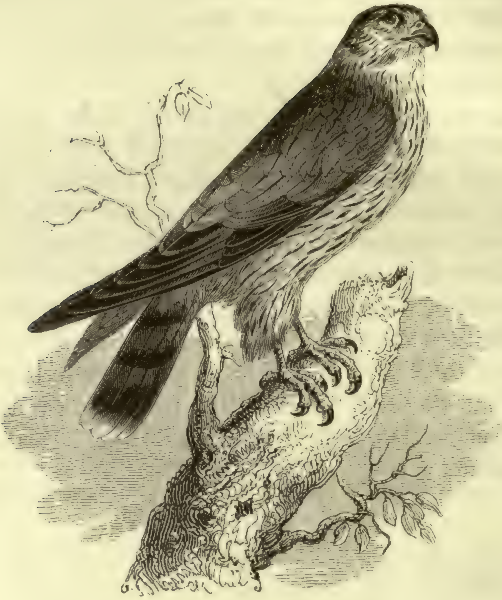
The young males before their first change are similar to the young females, as hereafter described. At their first change, they become of a uniform pearl-grey; the thighs and flanks ferruginous; beak, cere, eyes, legs, toes, and claws, as in the old male. The vignette is taken from a young male that has nearly completed his first change, but still retains a portion of the barred appearance of his first livery on the outer or distal part of the wing, on the lower part of the back and the tail-feathers, the middle pair only of which are as yet moulted.

The adult female has the beak, cere, irides and legs as in the male; the head and back of the neck reddish-brown; the eye surrounded with dusky feathers almost black; the whole of the back, wing-coverts and tail, blackish-grey, barred transversely with bluish-black; upper surface of the primaries uniform dusky-black. The chin and throat nearly white; the breast and all the under surface of the body pale rufous, with dark reddish-brown longitudinal streaks; the thighs plain rufous; under wing-coverts rufous, with transverse bars of dark brown; under surface of the primaries blackish-grey, with numerous transverse bars of bluish-grey: under surface of the tail bluish-grey, with nine or ten transverse bars of bluish-black, which are broader as they approach the tip.

Young females have the top of the head reddish-brown with dusky streaks; the eyes encircled with black, with a small black pointed moustache descending from the front of the eye; ear-coverts white; upper surface of the body dark brown, the feathers ending with reddish-brown; primaries dusky-black, the inner edges and tips buffy-white; the tail dark brown, with numerous transverse bars of reddish-brown; throat white; sides of the neck, the breast, and all the under surface of the body, pale reddish-white, with brown longitudinal streaks and patches on the breast; the thighs uniform pale ferruginous; beak, cere and irides as in the adult female.



ACCIPITRES. *FALCONIDÆ.*



FALCO ÆSALON, Gmelin*.

THE MERLIN.

Falco æsalon.

THE MERLIN, in some parts of the country known as the "Stone-Falcon," is one of the smallest of the British *Falconidæ*, and being of rapid flight and great courage, possesses, on a diminished scale, all the attributes and characters of a true Falcon. So bold as well as powerful, in proportion to his size, is this little bird, that a male Merlin, not weighing more than six ounces, has been seen to strike and kill a Partridge that was certainly more than twice his own weight; and so tenacious generally is he of his prey, that it is very difficult to make him quit anything he has taken. The more common food of species is small birds, and they have been seen in chase of the smaller shore-birds, as the Sanderling and Dunlin.

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* Syst. Nat. i. p. 284 (1788).

The Merlin was formerly often, and is now occasionally, trained; and will take Snipes, Larks, Blackbirds and Thrushes. Messrs. Salvin and Brodrick say: "The strongest female Merlins may be trained to fly pigeons admirably, and from their small size, and the way in which they follow every turn and shift of the quarry, are better adapted for this chase than the Peregrine; unlike it, they do not stop when the pigeon takes cover in a hedge or tree, but dash in and generally secure it."

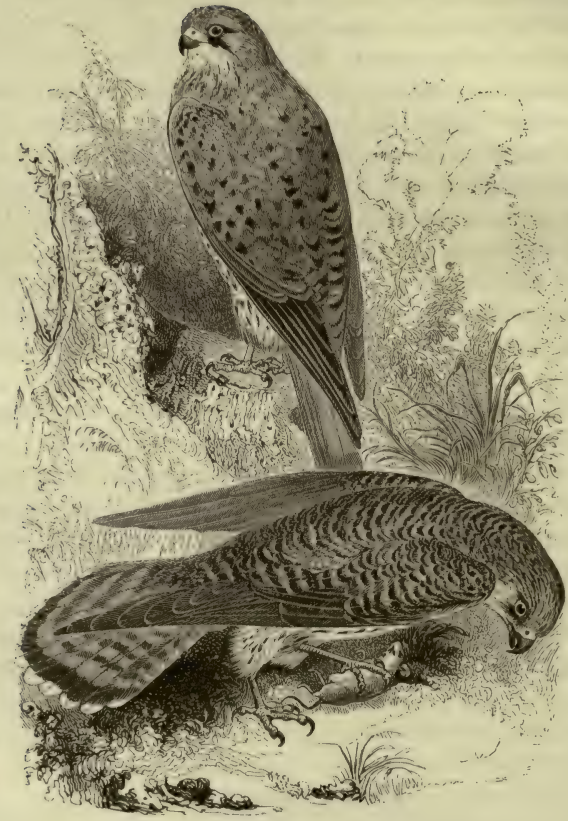
The Merlin was formerly considered to be only a winter-visitor to this country, and in the southern parts of England that is without doubt its character, though instances are recorded of its also remaining to breed. Mr. Murray Mathew informed Mr. More that it has been seen on Exemoor, in June, and its nest is said to have been found more than once in the New Forest. On Dr. Bree's authority it is stated to breed in Essex, and Herefordshire and Shropshire are counties in which it occasionally does so. In Wales, too, it has its nest, but only regularly in the north. On the Derbyshire moors it breeds annually, as also in every county of Great Britain, from Yorkshire northward to the Shetlands. In Ireland, it frequents chiefly the mountainous districts throughout the island, descending in winter to the lower parts of the country.

This species is confined to the more northern portion of the Old World, its place in America being taken by the kindred *Falco columbarius*, which, among other differences, is said to be recognizable by the fewer bars on its tail. The Norwich Museum contains a specimen of the Merlin, caught at sea in May, 1867, by Mr. Edward Whymper, on his voyage to Greenland, in lat. 57° 41′ N., and long. 35° 23′ W., and this appears to be the most western limit ever reached by the species. In Iceland it is very common in summer, arriving at the end of March and leaving in October; in the Færoes it remains all the year. It breeds in suitable localities throughout Norway, and the northern part of Sweden, as well as in Finland. Thence it ranges across Russia and Siberia, to the Sea of Ochotsk, where Dr. von Middendorff found it breeding, but it is said not to be very numerous in Eastern Siberia, and the specimens described thence by Herr Radde differed slightly from European ones. It does not seem to have been observed in Japan, but Mr. Swinhoe has met with it several times in China. In India it visits the Punjaub, and upper portions of the North-west Provinces in the cold weather, and Mr. Jerdon says it is trained to fly at the Hoopoe, and also at Quails. It has been found at Erzeroum, and was obtained in winter at Smyrna by the late Mr. H. E. Strickland. In Palestine it is not uncommon at the same season, as is also the case in Egypt. Dr. Hartmann found it in northern Nubia, and the Leyden Museum possess a specimen from Khartoum. Loche records it as breeding in Algeria, but the statement seems open to doubt. It occurs, generally at the season of migration, in most, if not all, of the principal islands of the Mediterranean, and is not uncommon in winter in Spain. Throughout Europe it is pretty universally distributed, but the southern limits of its breeding-range cannot at present be accurately defined.

The Merlin makes its scanty nest on the ground, in rocks, or occupies that of some other bird in a tree. The first is the mode it usually follows in Britain, but in Lapland the last is as commonly its practice. It lays from four to six eggs, which are sometimes uniformly suffused with a deep brick-red, often varied, however, by mottling of a darker shade, a slight purple tint pervading the whole. Very beautiful varieties are occasionally seen; a nest of six from Sutherland, in the Wolley Collection, are thickly blotched with crimson-red on a white ground, while another is of a cream-colour, partially blotched with purplish-red and violet. They measure from 1·6 to 1·48 by 1·24 to 1·15 in.

The Merlin measures from ten to twelve inches in length, according to the sex. An old male has the beak bluish horn-colour, palest at the base, darkest towards the tip; the cere yellow, the irides dark brown; the top of the head blue-grey, with dark lines passing backward; the cheeks, and thence round the back of the neck, pale reddish-brown, also marked with dark streaks, forming a collar; the whole of the back and wing-coverts fine blue-grey, the shaft of each feather forming a dark median line; primaries pitch-black; upper surface of the tail-feathers bluish-grey over two-thirds of their length, with slight indications of three dark bands, the distal third nearly uniform black, the tips of all the feathers white; the chin and throat white; breast, belly, thighs, and under tail-coverts, rufous, with brown median patches, and darker brown streaks; under surface of the tail-feathers barred with two shades of grey, a broad dark terminal band, and white tips; legs and toes yellow; claws black.

In the female, the top of the head, back, wing-coverts, and secondaries are dark liver-brown, the shaft of each feather darker, the edge tipped with red; the tail-feathers brown, with five narrow transverse bars of wood-brown; under surface of the body pale brownish-white, with darker brown longitudinal patches; the beak, cere, eyes, legs, toes, and claws as in the male. Young males resemble the females; and in birds of the year, the wings do not reach so far towards the end of the tail as in those that are adult.



Falco tinnunculus, Linnæus*.

THE KESTREL, OR WINDHOVER.

Falco tinnunculus.

The Kestrel is the most common species of the British *Falconidæ*, and from its peculiar habits, which place it very often in view, it is also, as might be expected, the best known. It is handsome in shape, attractive in colour, and graceful in its motions in the air; though from its mode of

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[*] Syst. Nat. Ed. 12, i. p. 127 (1766).

searching for its food, and the shortness of its wings compared with the other small species already figured, it departs from the characters of the true Falcons. It is best known, and that too at any moderate distance, by its habits of sustaining itself in the air in the same place by means of a short but rapid motion of the wings, while its powerful eyes search the surface beneath for prey. It has acquired the name of Windhover from its habit of remaining with outspread tail suspended in the air, the head on these occasions always pointing to windward ; and it is also called Stonegall, or Stannell. By many authorities the Kestrel has been separated from the genus *Falco*, and held to be the type of the genus *Tinnunculus*, in which case the present species is called *Tinnunculus alaudarius.*

Mice form the principal part of the food of the Kestrel; and it appears to obtain them by dropping suddenly upon them. Montagu says that he never found any feathers in the stomach of this species; but it is certain that it does occasionally kill and devour small birds, and at times the young of larger ones. The remains of frogs, coleopterous insects, their larvæ, and earth-worms have been found in their stomachs; and Selby, on the authority of an eye-witness, has recorded the fact of the Kestrel hawking cockchafers late in the evening. The observer watched the bird through a glass, and "saw him dart through a swarm of the insects, seize one in each claw, and eat them while flying. He returned to the charge again and again. I ascertained it beyond a doubt, as I afterwards shot him."

Among the many interesting communications on birds which have appeared from the pen of Waterton, and from his own observations, is one on the habits of the Windhover, in which the value of the mouse-destroying propensities of this friend to the farmer is clearly pointed out.

In spring the Kestrel frequently takes possession of the nest of a Crow or a Magpie, in which to deposit its eggs. Sometimes these birds build in high rocks, or on old towers, in ruined buildings, and, though rarely, in the trunk of a hollow tree, laying four or five eggs, mottled all over with dark brownish-red or orange, and sometimes with blotches of the same upon a pale reddish or white ground. They vary in size more than those of the Merlin, which they otherwise much resemble, and measure from 1·42 to 1·67 by 1·36 to 1·2 in. The young are hatched about the end of April or beginning of May, and are clothed with a yellowish-white down.

The Kestrel is too common in these islands to render necessary an enumeration of the counties in which it breeds. In the south, and perhaps in other parts of England, its numbers receive an increase in autumn, supplied doubtless from the north, and there are districts in which it is either wholly unknown or but seldom seen in winter, so that in Britain it partially migrates, while in many other countries it does so unmistakably. It is a bird of very wide distribution, and as Messrs. Sharpe and Dresser remark, "ranges over the entire Palæarctic Region, being found throughout Europe and Siberia, visiting India in the winter, and also migrating, but apparently in more limited numbers, to Africa." It must be said, however, that the Kestrel does not occur in Iceland, and has only once, according to Herr H. C. Müller, been taken in the Færoes. Its precise northern limit in Europe is perhaps doubtful; but, though it was found breeding near Tromsö in Norway by Professor Lilljeborg, and by Wolley in Finland, at about 68° N. lat., there seems to be no proof of its reaching, as has been stated, the North Cape, and it was never observed in East Finmark by Pastor Sommerfelt during his nine years' residence. With regard to its range in Siberia, Herr Radde says that he found it common only as far as Omsk, beyond which it was very seldom seen. Still Kestrels occur much further to the eastward, though whether they are identical with the true *Falco tinnunculus*, or belong to the darker form, which, from its inhabiting Japan, has been separated as a variety under the name of *japonicus*, remains uncertain. In China, it would seem, from Mr. Swinhoe's researches, that both forms occur. Some examples from Burmah, India, and Ceylon, in Lord Walden's collection, are, according to the painstaking authors of the 'Birds of Europe,' before quoted, indistinguishable from those killed in Britain, while others again are much paler in colour. Returning towards the west, Eversmann observed it in Bokhara, and, though not noticed by De Filippi in Persia, it is said by Ménétries to extend to the frontiers of that country, while it is common in the Caucasus, occurring even at the height of six thousand feet. In Palestine, too, it is abundant, breeding, according to Canon Tristram, in very many localities, and generally some twenty to thirty in the same spot. In the northern part of East Africa it is resident, but vast flocks arrive in autumn and pass to the southward to Arabia, Abyssinia, and the Soudan, returning again when winter is past. Mr. Gurney received a specimen said to have come from the Seychelles, but it is certainly not a common bird in those islands, which possess a species peculiar to themselves, the *Falco* or *Tinnunculus gracilis*. Dr. von Heuglin observes, that the Kestrels which remain in North-east Africa are generally more brightly coloured than European examples, with larger and blacker spots, and that the head of the hen is darker reddish-grey, and the band on the tail broader; and Professor Sundevall makes much the same remark. The most southern limit of the Common Kestrel would seem to be the latitude of the Cape of Good Hope, whence a young male, caught on board ship, is contained in the Leyden Museum. Andersson sent a single example from Damaraland; Mr. Sharpe has received it from the Fantee-country, in West Africa; and it also occurs in Senegambia. In the Cape Verde Islands and the Canaries it is common and resident, as it also is in the Azores and Madeira; but examples from the last locality are remarkable for their dark colour. It is also abundant in Morocco and Algeria, and, according to the late Mr. Chambers-Hodgetts, in Tripoli.

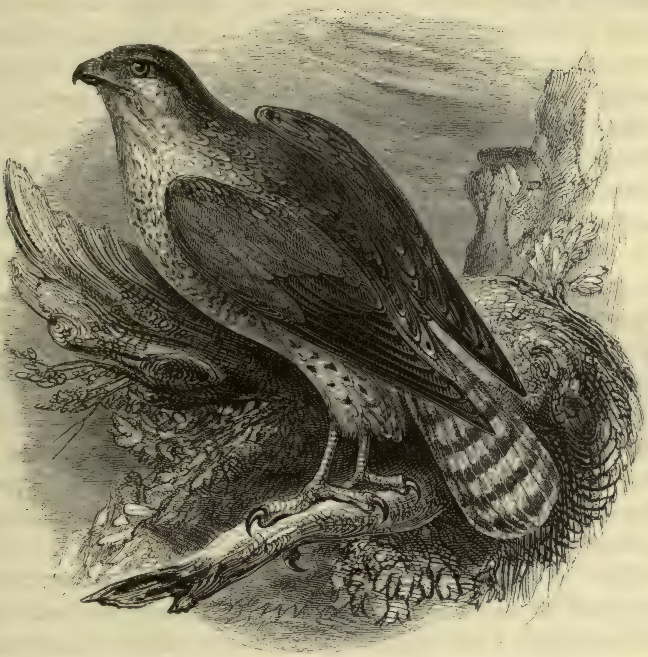
About a dozen other species of Kestrel are known, some of which have a curiously restricted range, as that of the Seychelles, before mentioned; that of Mauritius, *Falco punctatus;* and that of Cuba, *F. sparverioides;* while others have a wider distribution, and the so-called "American Sparrow-

Hawk," *F. sparverius*, rivals *F. tinnunculus* in its range, extending over nearly the whole of the New World; and, though examples vary exceedingly in colour, it has hitherto defied the power of ornithologists satisfactorily to divide it even into local races. One species, the Lesser Kestrel and *Falco cenchris* of authors—a common bird in Southern Europe—is said to have been killed in England, and has been admitted by the Rev. Francis Orpen Morris to a place in the last edition of his 'British Birds,' but on what appears to have been incomplete evidence.

The whole length of the Kestrel is from thirteen to fifteen inches, depending on the sex. The male, the upper figure in the illustration, has the beak blue, pale towards the base; the cere and orbits yellow, the irides dark brown; the top of the head, cheeks, and nape of the neck, ash-grey, with dusky longitudinal streaks; the back, tertials, and wing-coverts, reddish fawn-colour, with small black triangular spots dispersed over them, one occupying the point of each feather; the primaries and secondaries blackish-grey, with lighter-coloured edges; the tail-feathers ash-grey, with a broad black band near the end, and a white tip; the breast and belly pale rufous fawn-colour, with dark longitudinal streaks on the former, and dark spots on the latter; the thighs and under tail-coverts rufous fawn-colour, without spots; the tail beneath greyish-white, with imperfect dark transverse bars; the legs and toes yellow; the claws black.

In the female, the top of the head is reddish fawn-colour, striped darker longitudinally; the whole of the upper surface reddish-brown, barred transversely with bluish-black; primaries darker than in the male: the whole under surface of the body of a paler ferruginous colour, but streaked on the breast and spotted lower down, as in the male; under surface of the tail more uniform in colour and less distinctly barred than in the male.

Young males are like the female till after their first winter, but then begin to exhibit the adult plumage, the head being the last part to change.



ASTUR PALUMBARIUS (Linnæus*).

THE GOS-HAWK.

Astur palumbarius.

ASTUR, *Lacépède*†.—Bill short, bending from the base; cutting edge of the upper mandible produced, forming a festoon. Nostrils oval. Wings short, reaching only to the middle of the tail-feathers, the fourth quill-feather the longest. Legs stout, the tarsi covered in front with broad scales. Toes of moderate length, the middle toe somewhat the longest, the lateral toes nearly equal, but the inner claws considerably larger than the outer.

INFERIOR in powers to the Falcons, though equal in size to the largest of them, the Gos-Hawk or Goose-Hawk is yet the best of the short-winged Hawks; but its habits, as well as its mode of flying at its game, are very different: it does not stoop to its prey, like most of the Falcons, but glides along in a line after it, and takes it by a mode which, in the language of falconry, is called *raking*. The Gos-Hawk is in some esteem among falconers, being flown at Hares, Rabbits, Pheasants, and Partridges. It flies low and fast for a short distance, may be used in an enclosed country, and will even dash through woods after its prey; but if it does not catch the object, it soon gives up the pursuit, and perching on a bough, waits till some new game presents itself, or until the quarry, being pressed by hunger, is induced to move; and as the Hawk is capable of greater abstinence, it generally succeeds in taking it. Montagu was informed by Colonel Thornton that at Thornville Royal, in Yorkshire, he flew a Gos-Hawk at a Pheasant; but it got into cover, and he lost the Hawk: at ten o'clock next morning the falconer found her, and just as he had lifted her, the Pheasant ran and rose.

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* *Falco palumbarius*, Linnæus, Syst. Nat. Ed. 12, i. p. 130 (1766).

† Mémoires de l'Institut, iii. p. 506 (1800–1801).

The Gos-Hawk is a rare species in England at the present day, and those that are used for hawking are obtained from the continent; yet examples have been taken of late years in several counties. Mr. Pemberton Bartlett, in 'The Zoologist' for 1844 (p. 618), notices one recently killed in Kent, and in the same magazine for 1846 (p. 1496) mention is made by Mr. George Horn, of Egham, of one caught at the beginning of that year. In Suffolk the capture of five examples, and in Norfolk of eleven, has been recorded, mostly within the last few years. One is also said by Mr. Sterland, in his 'Birds of Sherwood Forest,' to have been taken in 1848 at Rufford in Nottinghamshire. In Northumberland or the adjacent counties seven examples have been killed, according to various writers. In Scotland at least half-a-dozen have lately occurred from Roxburghshire to the Shetlands, the particulars of which will be found in Mr. Robert Gray's work, while that gentleman, on the testimony of Mr. Tottenham Lee, has reason to believe that it has even recently bred in Kirkcudbrightshire, as it formerly, almost without doubt, did in Forfarshire, Stirling, Moray and Sutherland. The same author also quotes evidence from the 'Liber de Melros,' which seems to shew that in the thirteenth century it regularly bred on the Border. Colonel Thornton, when in Scotland, had a nestling sent to him from the forest of Rothiemurcus, and saw some eyries both there and in Glenmore. Hence it is not unreasonable to suppose that, in the days when large forests of Scotch-firs flourished naturally in that kingdom, it inhabited the districts so occupied; still there can be no doubt that considerable confusion has arisen from the fact that in several places its common name has been and yet is applied to the Peregrine Falcon, and hence some caution must be used in accepting all the testimony as to its former abundance in this country. The Falcon Gentil of Pennant, as has already been said (p. 56), is the present species, which under that name he describes and twice figures, mistaking the second for the first plumage and the converse. In Ireland it seems to have occurred very seldom. Thompson was unable to include it with certainty as a bird of that island, but Mr. Watters records the occurrence of a male in the county Longford in 1846, and lately one was observed in county Wicklow by Mr. A. Basil Brooke (Zool. s.s. p. 2283).

On the continent of Europe the Gos-Hawk is very generally distributed, being most plentiful in Germany. It is far from uncommon in Lapland, where it breeds as far north as the trees attain any size, and a representation of its nest is given in the 'Ootheca Wolleyana.' It inhabits nearly the whole of the Russian Empire, reaching to Kamtchatka: many individuals from those far eastern regions, as also, to some extent, those from Southern Russia, being paler in colour and some almost perfectly white, these last being highly valued for Falconry. In China Mr. Swinhoe saw it used for hawking near Pekin. It inhabits and breeds in the Himalayas, and occurs in winter on the plains of the Punjaub. De Filippi noticed it in Persia. In Palestine it seems to be rare, and not found south of the Lebanon. It is recorded from Egypt by Savigny and Rüppell, as well as by Captain Shelley, but there it seems to be scarce. In Algeria it is only of accidental appearance. In Portugal it is pretty common and the same is the case with it in parts of Spain. In many districts of France it breeds annually, but its numbers also receive an addition in autumn. In Italy it is rare, and still more so in Sicily, though, according to Malherbe, it breeds there. In Sardinia it is an autumnal visitant. It occurs in the Cyclades in winter, but on the mainland of Greece and in Turkey it is resident and not rare. Within the limits thus traced it is a very well-known species, preying on almost every kind of beast or bird that it can catch—Hares, Rabbits, Squirrels, Wild Ducks, Grouse, Pigeons and domestic poultry.

The late Mr. Hoy, who frequently visited Germany supplied Mr. Hewitson with the information that the Gos-Hawk "builds its own nest, and, if undisturbed in its possession, will frequently occupy it for several years, making the necessary repairs. It is placed in some high tree on the outskirts of the forest, and is rarely found in the interior of the woodland, except in those parts which are cleared and free from timber." A nest in Norwegian Lapland, to which Wolley climbed, was at a good height in a large Scotch-fir, and so thick that when he stood on the branch on which its lower part rested, the top was some inches above his head: its building had probably been the work of years. The eggs of the Gos-Hawk are three or four in number, white and most commonly unspotted, but not unfrequently varied by a few vermiform markings of a pale olive tint, and occasionally by a few specks of dark reddish-brown. They measure from 2·48 to 2·12 by 1·88 to 1·75 in. A bird for many years in Mr. Gurney's possession, several times laid eggs, which she shewed an inclination to brood.

A full-grown female measures from twenty-two to twenty-four inches in length;—the males about nineteen inches; but when adult, the plumage is nearly similar. The beak is bluish horn-colour; the cere yellow, and irides orange: the top of the head, the whole of the back, upper surface of the wings and tail, dark greyish-brown,—in females the colour inclines to clove-brown; the upper surface of the tail barred with darker brown: a band passing over the lores, eyes, cheeks and ear-coverts, the nape of the neck, throat, breast, belly and thighs, nearly white, with spots, transverse bars and undulating lines of dull black; under tail-coverts white; lores, cheeks and ear-coverts greyish-brown, forming an elongated dark patch on the side of the head; the legs and toes yellow; the claws black.

The young birds have the beak, cere and eyes nearly similar to those of the adults; the top of the head, nape and ear-coverts, ferruginous-white, each feather darker in the middle; back, wings and upper tail-coverts, brown, margined with buff; upper surface of the tail with five bands of dark brown and four bands of lighter brown, the ends of all the feathers white; primaries dark brown, barred with two shades of brown on the inner webs; the chin, throat, breast and belly, greyish-white, each feather with a median elongated patch of dark brown; thighs and under tail-coverts with a dark brown longitudinal streak, instead of a broad patch; under surface of the wings greyish-white, with transverse dusky bars; under surface of the tail greyish-white, with five darker greyish-brown transverse bars; legs and toes yellow-brown; the claws black.

Bewick, in his well-known work, having figured an adult Gos-Hawk, a young bird was chosen for the illustration here given.*

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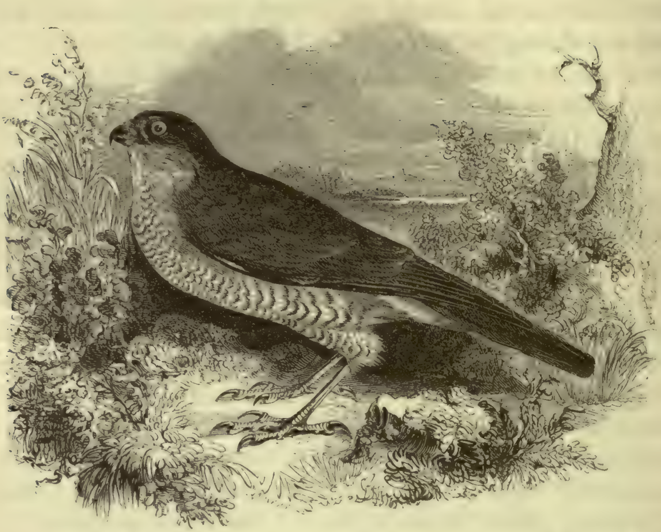
* In America our Gos-Hawk is represented by an allied yet distinct species—the *Astur atricapillus*, recognizable in its adult plumage by its darker head and the much closer barring of its lower surface. Three examples of this bird, two of which were adult females, have been killed in the British Islands. The first, recorded by Mr. Robert Gray in 'The Ibis' for 1870 (p. 292), on Shechallion in Perthshire in 1869, the second, also recorded in the same volume (p. 538), by Sir Victor Brooke, on the Galtee mountains in Tipperary in 1870, and the third, obtained at Parsonstown in the King's County in 1870, by Mr. Basil Brooke (Zool. s.s. p. 2524).



ACCIPITER NISUS (Linnæus*).

THE SPARROW-HAWK.

Accipiter nisus.

ACCIPITER, *Brisson*†.—Beak bending from the base, short, compressed, superior ridge rounded and narrow, cutting margin of the upper mandible with a distinct festoon. Nostrils oval. Wings short; the fourth and fifth quill-feathers nearly equal in length, and the longest. Legs long, slender, and smooth. Toes long and slender, the middle toe particularly, the claws curved and sharp.

THE SPARROW-HAWK is another short-winged Hawk, but of comparatively small size, in its habits very similar to the bird last described, and has been aptly termed a Gos-Hawk in miniature. In most wooded districts the Sparrow-Hawk is a common and well-known species; bold, active, vigilant

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[*] *Falco nisus*, Linnæus, Syst. Nat. Ed. 12, i. p. 130 (1766).

[†] Ornithologie, i. p. 310 (1760).

and destructive, a dangerous enemy to small quadrupeds and young birds, upon which it subsists, and is so daring during the season in which its own nestlings require to be provided with food, as frequently to venture among the out-buildings of the farmhouse, where it has been observed to rapidly skim over the poultry-yard, snatch up a chick, and get off with it in an instant. The female Sparrow-Hawk is, indeed, the only bird-of-prey which the game-preserver nowadays need fear.

In reference to the capabilities of this species for hawking, Sebright says that he once took a Partridge with a Sparrow-Hawk of his own breaking, ten days after it had been taken wild from a wood. In England it is commonly used for taking Land-Rails, Partridges, Blackbirds, Thrushes and other small birds, but in India it is trained to quarry of much swifter flight, such as the Courser and Sand-Grouse.

The Sparrow-Hawk generally builds its own nest, but often takes possession of that of some other bird, frequently a Crow's, in which the hen lays four or five eggs, which are usually of great beauty, being boldly blotched with deep brownish-crimson on a white or pale bluish-white ground, the markings being often massed together and leaving a large part of the shell uncoloured, though examples are not rare which are more uniformly spotted. Occasionally the colouring is collected at one of the ends, and sometimes in the form of a zone, while again it is found diffused over the whole surface. The eggs measure from 1·72 to 1·42 by 1·36 to 1·17 in. The young are covered with a delicate and pure white down, and are abundantly supplied with food. Selby mentions having found in a nest containing five young Sparrow-Hawks, a Lapwing, two Blackbirds, a Thrush and two Green Linnets, recently killed, and partly divested of their feathers.

The Sparrow-Hawk is common throughout the whole of Great Britain, and the enclosed and wooded parts of Ireland. It also inhabits every country of the European continent, from the most northern province of Norway southward. It extends across Asia to Japan, and in China occurs at least as far south as Canton. It visits most parts of India during the cold weather, and is believed to breed in the Himalayas. In Western Asia it penetrates to Arabia, and in Eastern Africa to Kordofan. It breeds, according to Loche, in Algeria, and Dr. Bolle says the same of it in the Canaries. In Germany, Switzerland, and some districts of France, a local race or species, the *Accipiter major* of some authors, is said to occur; differing from *A. nisus* in its larger size, in the absence of the slate-colour above and the rust-colour beneath, and in the broader, darker and more numerous bands of the tail. M. Gerbe, in his revised edition of the 'Ornithologie Européenne' of the late Dr. Degland, enters at some length upon these alleged differences, but the opinion of most ornithologists, and probably the correct one, is that the *A. major* is not a good species, or even a distinct race. In the south of Russia, the Levant, and most likely other adjoining countries, there does, however, exist a second species of Sparrow-Hawk, known under various names, of which *A. brevipes* (Severzow), seems to be the correct one. This differs notably from the Common Sparrow-Hawk in its shorter toes. It is the *Falco gurneyi* of Dr. Bree's 'Birds of Europe' (iv. p. 185).

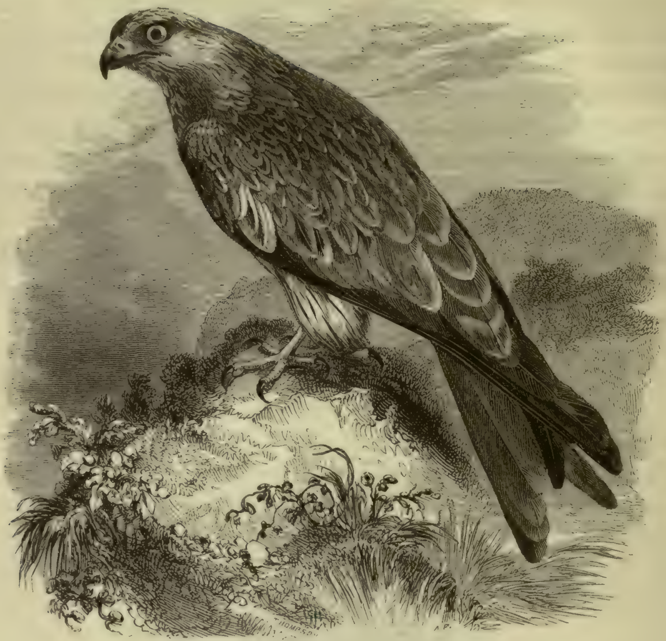
The adult male Sparrow-Hawk measures about twelve inches in length; the beak blue, lightest at the base; the cere greenish-yellow, the irides orange; the upper surface generally, with the exception of a small white spot on the nape, of a dark bluish slate-colour; tail greyish-brown, with from three to five dark transverse bands; the chin, cheeks, throat, breast, belly, thighs and under tail-coverts, rufous, with numerous transverse bars of darker rufous-brown; legs and toes yellow; the claws black.

The female is generally three inches longer than the male; the beak, bluish horn-colour; cere yellowish, the irides orange; the top of the head, upper part of the neck, except the white spot on the nape, back, wing- and tail-coverts, brown, many of the feathers white at the base; primaries and tail light brown, with dark transverse bars; under surface of the neck, body, wing-coverts and thighs, greyish-white, barred transversely with brown ; under surface of the wing- and tail-quills of the same colour, but the light and dark bars much broader; the first six primaries emarginated; the first the shortest, the fourth and fifth equal and the longest; the legs and toes yellow; the claws black.

The young male resembles the female; but the brown feathers of the upper parts are edged with reddish-brown; the tail reddish-brown, particularly towards the base, with dark transverse bands as in the adult.

Some females, supposed to be very old, greatly resemble the adult males, and white varieties have been several times met with.

ACCIPITRES. *FALCONIDÆ.*



MILVUS ICTINUS (Savigny[*]).

THE KITE, OR GLEAD.

Milvus vulgaris[†].

MILVUS, *Lacépède*[‡].—Beak straight at the base, curved from the cere to the point, cutting margin with a slight festoon. Nostrils oval, oblique. Wings long; the third or fourth quill the longest. Tail long, and generally forked. Legs short. Toes short and strong, the outer toe united at its base to the middle toe, but slightly reversible. Claws moderately long and curved.

THE RED KITE, once a familiar bird in this island, but now one of the rarest, is readily distinguished among the British *Falconidæ*, even when at a distance on the wing, by its long and forked tail, and its graceful and gliding flight, which has given it, according to the best authorities, the name, Glead. The word so rendered, however, in our version of the Bible is of more general application in Canon Tristram's opinion, and *Ayah*, translated Vulture, more properly means Kite. Occasionally this species sails in circles, with its rudder-like tail by its inclination governing the curve; then stops, and remains stationary for a time, the tail expanded widely. In its mode of taking its prey the Kite is distinguished from Falcons and Hawks generally, by seizing it upon the ground. The nature of the food also makes this habit evident; twenty-two moles have been found in the nest of a Kite, besides frogs and unfledged birds: it preys also on leverets, rabbits, snakes, and fish, but where it is abundant its food is chiefly offal, thus illustrating Sir T. Browne's remark that it was scarce near Norwich, "because of the plenty of Ravens." Old traditions shew that it frequently visited the poultry-yard, but it was not remarkable for its courage, and hens have been known by their vociferations and show of resistance to protect their chickens from the threatened attack, and even to drive away the unwelcome intruder.

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[*] Système des Oiseaux de l'Égypte et de la Syrie, p. 28 (1810).

[†] Fleming, British Animals, p. 51 (1828).

[‡] Mémoires de l'Institut, iii. p. 506 1800-1801).

In Hertfordshire and Essex the Kite was called the Puttock, and the Crotchet-tailed Puddock; but this name, as well as that by which it is now commonly called, was, and is, often used indiscriminately in some localities for the Buzzards and Harriers as well.

In former days the Kite, from the excellent sport it shewed when pursued by Falcons, was esteemed a bird especially adapted to the gratification of Royalty, and by many naturalists it is still called *Milvus regalis*, the epithet being originally bestowed upon it from this circumstance. The Falcons which cost Sir Thomas Monson so large a sum of money, as previously mentioned (p. 51), were expressly trained for this flight, hitherto unknown in England, and the only ones he could ever get to perform it. That gentleman was Master Falconer to James I., and, says the gossiping chronicler, Sir Antony Weldon, "in truth such a one, as no Prince in Christendome had." The birds killed nine Kites without missing one, but when the King was taken out to see their prowess at Royston, the quarry mounted to such a height, "as all the field lost sight of Kite and Hawke and all, and neither Kite nor Hawke were either seen or heard of to this present." About a hundred years ago, the then Lord Orford pursued the same sport at Alconbury Hill in Huntingdonshire, and later still near Eriswell in Suffolk.

In proof of the docility of this species, Thompson relates that the Kite itself, on the other hand, has been reclaimed and trained to take a quarry, though of a humble kind. Mr. R. Langtry procured from the nest a pair which became tame and familiar, and notwithstanding that they were allowed their liberty every morning, when they soared to a great height, they always returned to the lure or fist on being called, and while on the wing, rats let out of a cage-trap were expertly caught by them.

This bird has now become exceedingly rare in England; extensive forests or well-wooded districts afforded it the only chance of escape from the war of extermination carried on by those who wished to preserve their poultry or game. Formerly it abounded throughout the country and even in London, where it seems there was a regulation for its protection, so as to have been an object of astonishment to foreigners. Thus the Bohemian Schaschek who visited England about 1461, after mentioning London Bridge in his journal,* remarks that he had nowhere seen so great a number of Kites as there, and the statement is confirmed by Belon, who says that they were scarcely more numerous in Cairo than in London, where they remained all the year, feeding on the garbage of the streets and even of the Thames itself.†

The nest, formed of sticks mixed with a variety of other substances—such as bones, bits of old shoes, and fragments of wasps' nests, but lined with softer materials, in which rags* seem always to have a place, is usually built in the forked branch of a large tree, but sometimes on a ledge of rock. From three to four eggs are laid in April or May. These are of a dirty white, more or less marked with spots and blotches of light reddish-brown or brownish-yellow, under which are often seen patches of pale lilac. They are commonly of a short oval form, and measure from 2·43 to 2·05 by 1·82 to 1·64 in. The nest is sometimes vigorously defended by the owners, and a boy has been known to be severely wounded in attempting to take the eggs.

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* Bibliothek des literarischen Vereins in Stuttgart, vii. p. 40 (1844).

† Knapp, in the 'Journal of a Naturalist' (p. 230), mentions the singular capture of some Kites which were roosting on tall trees in winter:—"a fog came on during the night, which froze early in the morning, and fastened the feet of the poor kites so firmly to the boughs that some adventurous youths brought down, I think, fifteen of them so secured." Mr. Fuller-Maitland has kindly informed the Editor that when a boy he heard of the same or a similar

In the southern counties of England there seems to be no place now wherein the Kite habitually breeds. There were nests in Lincolnshire until the year 1857, but owing in a great measure to the cutting down of the woods it has probably been driven from that locality. In 'The Zoologist' for 1871 (p. 2519), Mr. Newman mentions that two nests were found in Radnorshire in 1870, so that it is to be hoped that the species may still linger in Wales until happier times await it. When the first edition of this work was published, the woods near Alconbury Hill were still the breeding-places of the Kite, but it was extirpated there about the year 1844, or soon after. In Scotland, where it was formerly very common, it is now, according to Mr. Robert Gray, but rarely seen even in those localities in the west of that kingdom where, even as late as 1858, it remained to breed, and it does so now probably in three counties only—Aberdeen, Perth and Inverness. It occasionally occurs in the Hebrides, but in Ireland, according to Thompson, it has only been known as a very rare visitant, and Mr. Watters omits all mention of it.

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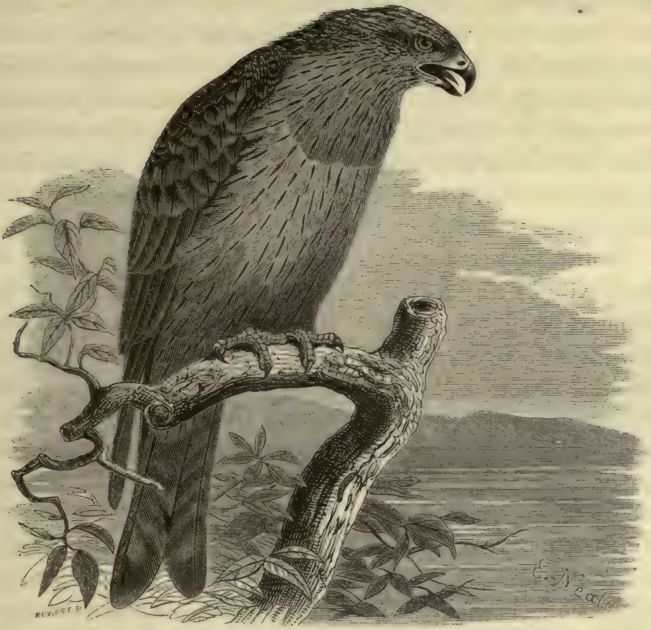
capture from his father's gamekeeper, a very old man. It seems probable, however, that it was rather the flight-feathers of the birds which were frozen together, and so hindered the birds from extending their wings, than that their feet were frozen to the boughs, but the story is proof of the abundance of the Kite.

[*] Thus justifying the saying Shakespear puts into the mouth of Autolycus: "When the Kite builds, look to lesser linen."—*Winter's Tale,* Act iv. Sc. 2.

The Kite is not uncommon in most parts of Europe, from the southern districts of Norway to the shores and islands of the Mediterranean. In Sweden, though one of the earliest birds to arrive in spring, it is said by Herr Wallengren not to breed north of lat. 61°, and it is not known with certainty to occur in Finland. Pallas says that it is common in the more southern provinces of Russia, and winters on the Lower Volga, but Professor Sundevall declares that this statement is a mistake, and that it does not occur so far to the east as, for instance, the Government of Kharkof, north of the Sea of Azof. In Palestine and Lower Egypt it is abundant in winter, and in the former a few remain to breed. It is also common in Algeria, both in the Dayats of the Sahara, and among the rocks of the Atlas, and according to Dr. Bolle is resident and abundant in the Canaries.

The specimen figured measured twenty-six inches in length. Wing, from the anterior bend to the end of the longest quill, nineteen inches; the longest tail-feather fifteen inches. Its beak is horn-colour, cere and irides yellow; the feathers of the head and neck greyish-white, streaked along the shaft with ash-brown; those of the back and wing-coverts dark brown in the middle, broadly edged with rufous; the inner web of some of the tertials edged with white: the primaries nearly black: upper tail-coverts rufous; tail reddish-brown and deeply forked, the inner webs barred with dark brown; the outer feathers the darkest: the chin and throat greyish-white, streaked with dusky; the breast, belly and thighs, rufous-brown, each feather with a median streak of dark brown: the wings beneath, rufous near the body, with dark brown feathers edged with red-brown on the outer part; under tail-coverts rufous-white: the tail beneath greyish-white, with dark bars; the tarsi and toes yellow; the claws black.

The females are rather larger than the males, and have the head greyer, with the body beneath more rufous.



Milvus migrans (Boddaert*).

THE BLACK KITE.

The Black Kite is supposed by some ornithologists to be one of those species which are gradually extending their geographical range, and being also a rather widely distributed European bird, little excuse seems to be needed for including it in this work, though as yet only a single instance of its occurrence in the United Kingdom is known with certainty. This instance was recorded by Mr. John Hancock in 'The Ibis' for 1867 (p. 253), as follows:—

"A fine mature male example of the Black Kite, *Milvus migrans* (Bodd. 1783) (*Falco ater*, Gmel. 1788), came into my possession in a fresh state on the 11th of May, 1866.

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[*] *Falco migrans*, Boddaert, Table des Planches Enluminéez, p. 28, no. 472 (1783).

It was taken in a trap by Mr. F. Fulger, the Duke of Northumberland's game-keeper, a few days before, in the Red Deer Park at Alnwick. This is, I believe, the first time that this fine rapacious bird has occurred in Britain.* The plumage was in very good condition, except on the lower part of the body (where it had sustained some injury from the trap), and agrees with that of mature specimens in my collection, which I received from the Continent some years ago. It was proved by dissection to be a male."

M. Jules Verreaux has informed Mr. Gurney that the Black Kite in France appears to be now more abundant than formerly, and apparently in proportion as the Red Kite is growing rarer. Dr. Bruch also, in the 'Journal für Ornithologie' for 1854 (p. 278), states that in the neighbourhood of Mayence, this species becomes commoner year by year. In many parts of the continent, no doubt, the Black Kite, like other birds which suffer much persecution during the breeding-season, is becoming scarcer; but the evidence of two ornithologists, so well-informed as those just named, as to its increase in certain localities, leads naturally to the supposition mentioned in the first sentence of this article.

Throughout nearly the whole of its wide range, the Black Kite is a migratory bird, passing northward in spring, and returning southward in autumn, so as fully to justify the earliest specific name, the bestowal of which upon it can be recognized—that of *migrans*, by Boddaert, though the appellation of *niger*, which it received from Brisson, continues to be used by many writers. The name of *ater*, subsequently given by J. F. Gmelin, or that of *ætolius* by Savigny—the last equally belonging to an allied species, is also frequently applied to this bird.

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* It must be observed, however, that Sibbald, in his 'Scotia Illustrata' (part iii. p. 15), published in 1684, includes among the animals of Scotland "Milvus niger, a *black* Gled. An Lanius?"; and Don, in his Account of the Plants and Animals of Forfarshire, published, in 1813, as an Appendix to Headrick's 'General View of the Agriculture of the County of Angus,' inserts in his list of birds (p. 39), between the names of *Falco milvus* and *F. buteo*, "Falco ater; black eagle: on heaths and low hills." It is hardly probable that any light could now be thrown upon the species intended by the first of these writers; but the localities given by the second, as those frequented by the bird he meant, almost preclude the possibility of its being the *Falco ater* of Gmelin—the real Black Kite of authors, which, as will presently appear, is rather a woodland species; and it seems not altogether unlikely that a Marsh-Harrier might have misled Don.

Like the preceding species, the Black Kite is naturally an inhabitant of forests or woodland tracts, and especially such as are interspersed with lakes and rivers, whence it procures the fishes and frogs which form its chief living food, though it also preys upon insects, young birds, and the smaller mammals. It will besides eat offal as readily as the Red Kite, and to obtain it shews remarkable fearlessness of man, haunting encampments and entering towns; but it possesses no high courage, and submits to be robbed of its booty by Crows or Daws. Dr. Finsch states that on the Balkan he several times saw Black Kites and Ravens engaged in devouring dead horses, and in many of the countries where the species abounds it is regarded as a most useful scavenger.

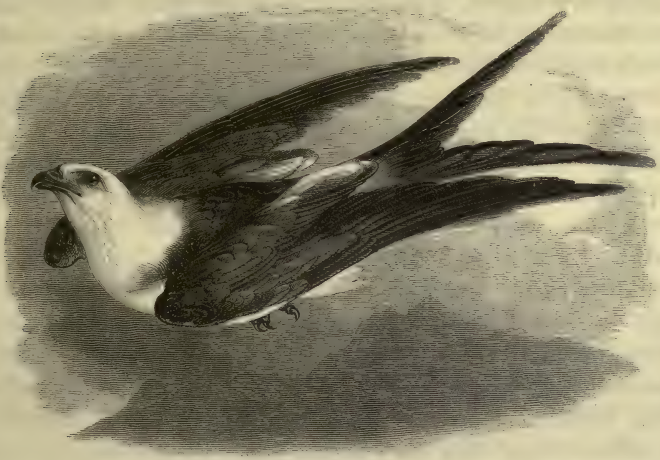
M. Alphonse de la Fontaine, in his 'Faune de Luxembourg,' describes the Black Kite as repairing daily at the same hour to the waters where it seeks its food. Arrived there it descends near the surface, following all the windings of the river's course with a slow flight, and, though never stopping long at one place, its keen eye detects the least movement of the fishes beneath. Watching the moment when one leaves the deeper parts for a shallow, or to gain a rapid, it plunges down and seizes the fish with its talons. On emerging it shakes the water from its feathers, and proceeds to eat the prey at a distance. This is its habit day after day without varying the direction of its flight, except when it has young and, having to perform more journeys to provide their food, it lessens the extent of its beat. When the rivers are flooded, and the bird is unable to fish in this manner, it betakes itself to other quarry, and will at times in its boldness snatch away poultry even from the interior of the farms.

The Black Kite has its nest in a tall tree, or selects the roots of a shrub growing out of a rock—the first being its usual practice in Europe, and the last that which it prefers in Africa. In the Algerian Atlas, according to Mr. Salvin, it builds a structure composed principally of sticks, with a lining of rags, wool and other soft materials, while on the surrounding branches are fantastically hung old pieces of Arab clothing of various colours. In southern Spain, according to Mr. Howard Saunders, it exhibits sociable qualities, and a comparatively small patch of wood will contain ten nests or more, while when building apart it has always an accompanying colony of Sparrows. Messrs. Elwes and Buckley state that two pairs of Black Kites had made their nests on a high plane-tree in one of the busiest streets of Pera, and seemed quite insensible to the noise which was going on all day around them. The same observers also remark that the nest of this species is very small. The eggs are two in number, and much resemble those of the Red Kite already described. Mr. Salvin and Canon Tristram state that examples procured by them are more distinctly and deeply marked, but it seems doubtful whether they ever attain the varied and beautiful tints exhibited by some northern and especially British specimens belonging to that species. They measure from 2·17 to 1·94 by 1·75 to 1·53 in., and are hatched in April or May.

The geographical distribution of the Black Kite is extensive. Though not found in Norway, Sweden, or Finland, in Russia it reaches as far to the north as Archangel and thence across Siberia, becoming rarer to the eastward and hardly observed, according to Pallas, beyond the Lena. Some of the modern Russian naturalists consider the *Milvus melanotis* of Eastern Siberia, Japan and China to be identical with *M. migrans*, and extend the limits of the latter accordingly, but the former is regarded by Mr. Gurney and other high authorities as quite distinct, being larger and sometimes nearly as rufous as *M. ictinus*. To the south-east and south two other species, which have much the same appearance, represent *M. migrans;* these are *M. affinis*, which ranges from Chusan to Australia, besides occurring in India, and *M. govinda*, the common "Pariah Kite" of that country, in which the true Black Kite is not found, though a specimen from Affghanistan in the East India Museum is, according to Mr. Gurney, referable to *M. migrans*. This last is said, by Pallas, to winter in Persia, where De Filippi also found it. It is very common in the Caucasus, and Messrs. Dickson and Ross obtained it at Erzeroom. In Palestine, according to Canon Tristram, it arrives about the beginning of March in immense numbers, and scatters itself over the whole country. There is much discrepancy in the accounts of recent travellers as to its occurrence in Egypt, some stating that it is very abundant there, and some avowing that they never met with it, and that another of its near allies, *Milvus ægyptius* (easily recognized, when adult, by its pale yellow beak), must have been mistaken for it. The explanation of the difficulty probably lies in the fact that while *M. ægyptius* is a resident in Egypt, *M. migrans* is a bird of passage only, and may not always stop for the convenience of other travellers on its way down or up the Nile valley. Drs. von Heuglin and A. E. Brehm include it as a bird of Eastern Kordofan and Abyssinia, and Mr. Blanford found it to be extremely common both in the highlands and lowlands of the country last named. Mr. Chapman sent specimens procured on the Zambesi to Mr. Layard, and Mr. Edward Newton shot a bird, pronounced by Mr. Gurney to be of this species, in Madagascar. Mr. Layard also records an example killed at Colesberg in the Cape Colony, and Andersson met with it in Damaraland, where it arrives in autumn in large numbers, and remains throughout the breeding-season. In West Africa it has been obtained at Bissao and on the Niger. It occurs in Morocco and is very common in Algeria, breeding in the Atlas, but not occurring to the south of that range of mountains, its place being taken by *M. ægyptius*. Returning to Europe, it is said to be met with occasionally in Portugal, and in Spain, as before noticed, it breeds. It breeds also in several parts of France, and Baron de Selys-Longchamps says, on the authority of M. de Meezemaeker, that it has been observed at Bergues, which is only a few miles from the English Channel. It does not seem to have occurred in Belgium, but the Leyden Museum contains a specimen killed in Holland. In Denmark it is found only in the south, and in northern Germany it appears to be rare; but more to the south and eastward it breeds not uncommonly in some localities.

An adult male from the Volga, killed in April, measures about twenty-two inches in length; the wing from the anterior bend to the end of the longest quill (the third) about seventeen inches; the tail ten inches and a half. The beak is black, the lower mandible yellowish at the base; the cere and lips orange. Iris pale greyish-yellow, surrounded by a black line. The head, throat and neck are of a dirty white, each feather with a longitudinal streak of dark brown, which is very narrow on the front feathers, but increases in breadth further backwards, the appearance of the whole at a little distance being grey. Back and upper wing-coverts of a deep hair-brown, with a slight purplish metallic gloss: the feathers darker near the shaft and lighter at the edges, the greater wing-coverts especially so. The quills and particularly the primaries and tertials dark reddish-brown, almost black, the last with purple reflexions. The tail above much the same colour as the back, the inner webs being lighter, and barred more or less distinctly with dark brown. The chest and breast of a dull clove-brown, each feather with a dark median stripe, which is bordered by a narrow line of dirty white; belly, flanks and under tail-coverts deep ferruginous, each feather with a dark line along the shaft. The lower side of the wings tinged with rufous. The tail beneath of a light brownish-grey, mottled and barred with a darker shade. Legs and toes yellow; claws, black. The female is somewhat larger, and of a darker and often redder colour.

The young have the iris dark, but greatly resemble the parents, except in wanting the grey head, and having their plumage more mottled—each feather being terminated by a light-coloured patch, which in some examples is of a greyish-white, in others ferruginous, and the bands of the tail are less distinct. Mr. Gurney is of opinion that examples from South Africa do not possess the grey head, and thereby much resemble the Australian and Eastern *Milvus affinis*. It may hence be inferred, perhaps, that South Africa is only visited by young birds in their first plumage.



NAUCLERUS FURCATUS (Linnæus*).

THE SWALLOW-TAILED KITE.

Nauclerus furcatus.

NAUCLERUS, *Vigors*†.—"Bill small, weak, considerably hooked, with a small and nearly obsolete festoon in the middle. Orbits and sides of the head thinly provided with feathers. Wings very long; the first and second quill internally emarginate towards the tip. Tail very long and deeply forked. Tarsi very short, not longer than the hind toe and claw; plumed half way in front, the remaining portion covered with angulated scales. Toes short; the two lateral almost equal, the hinder nearly equal to the inner. Claws grooved beneath."—*Swainson*‡.

Two specimens of this bird having been apparently taken in this country, it is, in the opinion of some persons, entitled to a place in this work. The first of these two examples occurred at Ballachulish in Argyleshire in 1772, and is recorded by the late Dr. Walker, Professor of Natural History in the University of Edinburgh, in his manuscript journal or '*Adversaria*' for that year, the fact having been first published by Fleming in his 'History of British

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* *Falco furcatus*, Linnæus, Syst. Nat. Ed. 12, i. p. 129 (1766).

† Zoological Journal, ii. p. 386 (1825).

‡ Natural History and Classification of Birds, ii. p. 210.

Animals' (p. 52). No further particulars however respecting it are known, nor does the entry state under what circumstances the bird was observed, as Professor Duns, who lately examined the original record, now in the library of the University of Edinburgh, has kindly informed the Editor. Details of the second example are more precise. In the extracts from the Minute Book of the Linnean Society printed at the end of the Fourteenth volume of its 'Transactions' (p. 583) under date "Nov. 4, 1823" there is a notice of a communication by Dr. Sims mentioning, on the authority of the late Mr. Fothergill of Carr End near Arkrigg in Yorkshire, the occurrence of a Swallow-tailed Kite near Hawes in Wensleydale in that county. The Editor has been favoured by a son of the gentleman last named—Mr. William Fothergill of Darlington, with a complete corroboration of this story in the shape of the original note in the handwriting of his father. This note states that "On the 6th of September 1805, during a tremendous thunder-storm a bird, of which a correct description follows, was observed flying about in Shaw Gill, near Simonstone, and alighting upon a tree was knocked down by a stick thrown at it, which however did not prove fatal, as I saw it alive and had an opportunity of carefully examining it four days after it was taken." A very accurate description of the specimen, which will be found at the end of this article, follows, and the note proceeds thus—the latter portion having to all appearance been written subsequently:—"The bird was kept to the 27th, and then made its escape, by the door of the room being left open while shewing [it] to some company. At first it arose high in the air, but being violently attacked by a party of Rooks, it alighted in the tree in which it was first taken. When its keeper approached, it took a lofty flight towards the south, as far as the eye could follow, and has not since been heard of.—[Signed] W. FOTHERGILL. Sepr. 30th. 1805." The Editor has further been kindly shewn by his obliging correspondent a letter addressed to his father the following year by his nephew—the late Mr. Charles Fothergill of York, an ardent naturalist, who says "I have also proved, what I expected would be the case, that the *Falco* taken at Hardraw Scarr was the Swallow-tailed Falcon or *Falco furcatus* of Linnæus." Unaccountable then as the fact may be, it rests on the evidence of perfectly competent witnesses and there is accordingly no room for doubt in this case.

Since this time three more examples of the Swallow-tailed Kite have been said to have been killed in England (Zoologist, pp. 4166, 4366, 4406, 4407, 5042) but on authority that must at present be regarded as insufficient, while a fourth, asserted to have been shot on the Mersey in June 1843, and to have been formerly in the Macclesfield Museum, was sold by public auction in London in June, 1861.

The Swallow-tailed Kite is a native of the warmer parts of America, and, except in the instances above cited, is not known to have occurred elsewhere in the Old World. In the United States, where it is a summer visitor, Mr. George N. Lawrence includes it among the birds of New York and New Jersey, and it occasionally strays to Philadelphia; but in the middle of the continent it occurs more regularly further to the north, and, according to Dr. Brewer, breeds in Wisconsin, where it was also noticed by Dr. Hoy; while Nuttall states that it ascends the Mississippi to the Falls of St. Anthony, and Dr. Coues records it from Fort Leavenworth on the Missouri. It does not however seem to occur to the west of the Rocky Mountains. In the Atlantic States it is not uncommon from North Carolina southward, frequenting the banks of rivers but not the sea-board. It breeds in South Carolina, Georgia and all the States bordering the Gulf of Mexico. Thence it appears to be spread throughout the conterminous countries lying to the southward at least as far as the Tropic of Capricorn, having been obtained by Natterer near Rio de Janeiro, while Vieillot states that it visits Buenos Ayres and occurs in Peru. In the West India Islands it has been observed in Jamaica by Mr. Richard Hill and in Cuba by Dr. Gundlach. In Trinidad, Léotaud says that it is a regular visitant in the rainy season from July to October, but that he never met with the young.

The habits of this bird have been described in detail by many observers, as the one last mentioned, Schomburgk, Prince Max, Nuttall and Wilson. Audubon writing of the species says:—

"They always feed on the wing. In calm and warm weather, they soar to an immense height, pursuing the large insects called *Musquito Hawks*, and performing the most singular evolutions that can be conceived, using their tail with an elegance of motion peculiar to themselves. Their principal food, however, is large grasshoppers, grass-caterpillars, small snakes, lizards, and frogs. They sweep close over the fields, sometimes seeming to alight for a moment to secure a snake, and holding it fast by the neck, carry it off, and devour it in the air. When searching for grasshoppers and caterpillars, it is not difficult to approach them under cover of a fence or tree. When one is then killed and falls to the ground, the whole flock comes over the dead bird, as if intent upon carrying it off."

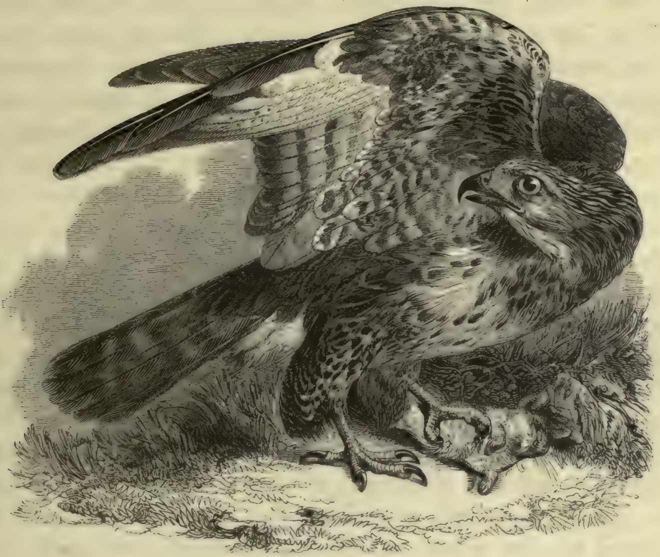
Dr. Bonyan (Proc. Zool. Soc. 1851, p. 57) in some notes on this species as observed by him in British Guyana, states that it takes small birds when feeding, adding that it soars to a greater height than any other Hawk known to him, and Mr. Robert Owen has given an interesting account (Ibis, 1860, p. 240) of a large flock of Swallow-tailed Kites, from an hundred-and-fifty to three-hundred in number, which he encountered while travelling in Guatemala. They were gliding to and fro near the ground, some of them within a dozen yards of it, in a close body, not one straying from the rest, in a manner that reminded him of our English Swifts, and he found that they were feeding upon a swarm of bees which was slowly skirting the hillside. "At times," he continues, "birds would pass within four or five yards of us, giving us time to observe their movements accurately. Every now and then the neck would be bent slowly and gracefully, bringing the head quite under the body, the beak continuing closed. At the same time, the foot, with the talons contracted as if holding an object in its grasp, would be brought forward until it met the beak. This position was only sustained a moment, during which the beak was seen to open; the head was then, with closed beak, raised again, and the foot thrown back. This movement was repeated very frequently, precisely the same actions being observable on every occasion, and this not only in the case of one bird, but of all of them."

Nuttall says that the Swallow-tailed Kites at times also seize upon the nests of locusts and wasps, and, like the Honey-Buzzard, devour both the mature insects and their larvæ; but snakes and lizards form their usual food. Macgillivray remarks that this species, unlike (so far as is known) all other *Falconidæ*, possesses no crop or enlargement of the œsophagus. Common as this bird is in various parts of America, very little seems known about its mode of breeding. Audubon describes the nest as placed on the top branches of the tallest trees and resembling that of a Crow, being formed of sticks, intermixed with Spanish moss and lined with coarse grasses and a few feathers. Mr. Dresser, who found the species very abundant in some parts of Texas, and had a good opportunity of observing it, states (Ibis, 1865, p. 326) that those he noticed in the month of May were preparing their nests in some high cotton-wood trees in a grove close to a creek near the Rio Colorado. He did not succeed in getting any of the eggs, but Mr. Henry Buckley has kindly forwarded the following description of one which he has received from Iowa:—"White with a very faint bluish tinge, marked all over, especially at the smaller end, with dark umber blotches of two shades. Except in size it is not unlike some Ospreys', and measures 1·78 by 1·44 in." Another egg from the same source now in Mr. Dresser's collection is much less highly coloured, and that gentleman remarks of it that "the grain most resembles that of a Marsh-Harrier's, but it has no gloss whatever. In form also it is not unlike the egg of that bird, and measures 1·95 by 1·5 in." Mr. Buckley's correspondent informs him that the eggs are usually, if not always, two in number, and are laid at the end of May or early in June, in nests resembling that described, as above, by Audubon.

The following is Mr. Fothergill's description, as above mentioned, of the example taken in Yorkshire in 1805:—

"Length 22 inches, breadth 4 feet 1 inch. The bill to the corner of the mouth $1\frac{1}{2}$ inch. long, much hooked, sharp and without a process: the tip black, apex, cere and orbits of the eye, pale blue. Irides a deep fiery red. Cere and base of the bill closely fringed with long black bristles. Head, neck and all the under parts of a pure and brilliant white; the shafts of the feathers on the crown of the head and ears delicately pencilled with black. Back, scapulars, wings and tail of a fine glossy black, varying according to the light it is placed in to green, purple and crimson. The lesser wing-coverts finely margined and tipped with white; the under wing-coverts of a pure white, tail long and forked and consisting of ten feathers, the longest of which are 12 inches, the shortest, or bottom of the fork, 6 inches. The wings, when closed, reach exactly to the end of the tail, and cross their long points over the rump. Legs very short and strong, much scaled, and, with the feet, of a dirty bluish-white; claws white. The feathers of the thighs so long as nearly to conceal the legs. Suppose it to be the Swallow-tailed Falcon."

It would be impossible to add to the completeness of the foregoing description: nothing could more conclusively show that the supposition with which it closes was correct. It only remains to state that the figure here given was taken from a specimen formerly in the Museum of the Zoological Society.



BUTEO VULGARIS, Leach[*].

THE COMMON BUZZARD.

Buteo vulgaris.

BUTEO, *Lacépède*[†].—Bill rather small and weak, bending from the base, part of the cutting edge of the upper mandible slightly projecting; cere large; nostrils oval. Wings ample; the first quill-feather short, about equal in length to the seventh, the fourth the longest; the first four feathers with the inner webs deeply notched. Tarsi short, strong, scaled or feathered. Toes short; claws strong.

THE BUZZARD is one of the least rare of the larger kind of Hawks which inhabit the wooded districts of this country, preying upon small quadrupeds, birds and reptiles. Its courage, as compared with others of the *Falconidæ*, has been questioned; since it is known to attack such animals as are either young or defenceless, which it does not pursue in flight but seizes upon the ground. Though occasionally seen soaring in the air in circles, it is more frequently observed stationed on a tree, from which if approached it starts out with a confused and hurried flight, indicative of fear. In such cases it has probably been resting after its meal, and Sir William Jardine states that he has known the same station taken up day after day, and hours spent by the bird in motionless repose. If not suddenly disturbed when roused from its perch, or during the season of incubation, says the same observer, "the flight is slow and majestic; the birds rise in easy and graceful gyrations, often to an immense height, uttering occasionally their shrill and melancholy whistle. At this time, to a spectator underneath, and in particular lights, they appear of immense size; the motions of the tail when directing the circles may be plainly perceived, as well as the beautiful markings on it and on the wings, sometimes rendered very plain and distinct by the body being thrown upwards and the light falling on the clear and silvery tints of the base of the feathers. The Buzzard is a fine accompaniment to the landscape, whether sylvan or wild and rocky."

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[*] Systematic Catalogue of Mammalia and Birds in the British Museum, p. 10 (1816).

[†] Mémoires de l'Institut, iii. p. 506 (1800–1801).

Macgillivray also gives the Buzzard a character for great activity; but the nature of the country where he observed it may require greater exertion to ensure a sufficient supply of food. In Scotland it generally forms its nest on rocks, or on the edges of steep scars or beds of torrents: one nest described by the writer last named was placed in such a situation and was composed of twigs, heather, wool and other substances. A nest seen by Wolley was built into the roots of a mountain-ash, between the trunk and the rock, and made of heather-stalks lined with *Luzula*. Another visited by him was on the horizontal bough of a Scotch-fir, and the year before had been occupied by a Kite; but in all the nests described by him the *Luzula* formed part of the lining. In England the Buzzard usually builds, or takes to, a nest in the forked branches of a tree in a large wood: the materials with which the nest is made, or repaired, are similar to those that have been already named.

The female lays two or three, and sometimes four eggs, of a short oval form, measuring from 2·32 to 2 by 1·86 to 1·58 in., and greatly resembling those of the Red Kite already described, but seldom if ever presenting any trace of the violet tints which the latter not unfrequently exhibit. Both parent birds attend upon and feed their young with great assiduity; and Willughby says, that the male Buzzard will brood the offspring if the hen is killed, as is the case with many kinds of birds. The young accompany the parents for some little time after they quit the nest; and White of Selborne adds, that they follow their dam with a piping and wailing noise.

The partiality of this species to the task of incubation and rearing young birds has been exemplified in various instances, one of the latest being mentioned by Mr. Rocke (Zool. p. 9686). Many years ago a female Buzzard, kept in a garden at Uxbridge, showed an inclination to sit by collecting all the loose sticks she could obtain. Her owner, noticing her actions, supplied her with materials; she completed her nest, and sat on two hen's eggs, which she hatched, and afterwards reared the young. For some years afterwards she thus hatched and brought up a brood of chickens annually. One summer, to save her the fatigue of sitting, some young chickens just hatched were put down to her; but she destroyed the whole. Her family in June, 1831, consisted of nine. When flesh was given to her, she was very assiduous in tearing and offering it as food to her nurslings.

Though far more rare now than formerly, an enumeration of the counties in which this bird yet continues to breed is hardly necessary. In the eastern and midland parts, however, as ascertained by Mr. More a few years ago, it has been nearly exterminated, though migratory examples not unfrequently occur in autumn. In the west and north of Great Britain, excepting the Outer Hebrides, the Orkneys and Shetlands, it still breeds regularly. In Ireland, according to Thompson, it was generally to be found in suitable localities, but in Mr. Watters's opinion was chiefly confined to the northern counties, where it bred along the basaltic precipices of the coast. It is doubtful whether such is now the case. The continued destruction of this species in the British Islands is a matter to be deplored by others than ornithologists. Mr. Hepburn writing to Macgillivray says: — "Besides devouring mice, the Buzzard is of great service to the farmer in effectually driving off the Ring-Doves from the corn;" and Mr. Robert Gray remarks that if it were allowed to fulfil the ends for which nature designed it, our native game-birds would benefit by the trial, adding that, "So far as my own observations have extended, the Common Buzzard is just the kind of instrument wanted to clear off sickly young birds, which on arriving at maturity yield an offspring of a degenerate breed. Of somewhat sluggish habits, it does not care to interfere with strong-winged birds, being content with those that, through wounds or a naturally feeble constitution, are unable to save themselves. In this way strong birds only are left, and a healthy breed ensues." There can be little doubt that the conclusions of these observers are indisputable.

On the continent of Europe this Buzzard is very generally distributed, and in some countries is abundant. The most northern limit of its breeding-range is not perhaps very accurately known; but Herr Wallengren was probably correct when he put it at 62° N. lat. for Norway and 66° for Sweden. In Finland, as far north as Kajana, it is stated by Dr. Malmgren to breed and to be the commonest of the *Falconidæ;* but further eastward Prof. Lilljeborg found it rare between Lake Onega and Archangel. From this point its course is not easily traced, few of the Russian ornithologists having met with it except in the southern provinces of their country; but Dr. von Middendorff found it breeding not uncommonly on the Stannovoi Mountains in the extreme east of Siberia, particularly remarking that the example he obtained was not referable to the *Buteo* *japonicus*—a bird which is so nearly allied as by some authorities to be regarded as specifically identical with *B. vulgaris,* but distinguishable by having its tarsi more feathered. The Common Buzzard was formerly said to occur in the hill-country of India, but Mr. Allan Hume has lately expressed a doubt on the subject which Mr. Jerdon is understood to be satisfied is correct. Ménétries says that it is tolerably common in the Caucasus, and Canon Tristram found it very plentiful in Palestine in winter. In Egypt it is a rare visitor, and only at that season. Loche says it is common throughout Algeria and breeds there, but other naturalists have not been so fortunate as to find it. Nevertheless it inhabits the Canaries, Maderia and the Azores—the last group of islands taking its name from this bird, though the Portugueze word *Açor* (a corruption of the Latin *Astur*) is not that which is usually bestowed upon it.

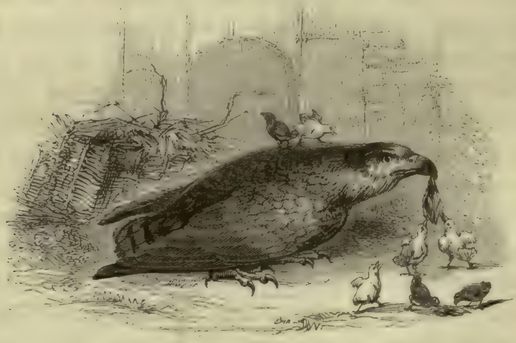
In North America this species is represented by the nearly-allied *Buteo swainsoni,* nowadays considered distinct, as well as by others of the genus, one of which, *Buteo lineatus* or the Red-shouldered Buzzard, is recorded (Ibis, 1865, p. 549) as having once occurred in Scotland. From information received from Mr. Gurney it appears also that an example of *Buteo desertorum* (Daudin)—a species of extensive southern and eastern range, has been killed in Wiltshire; but as yet no record of the fact seems to have been made public.

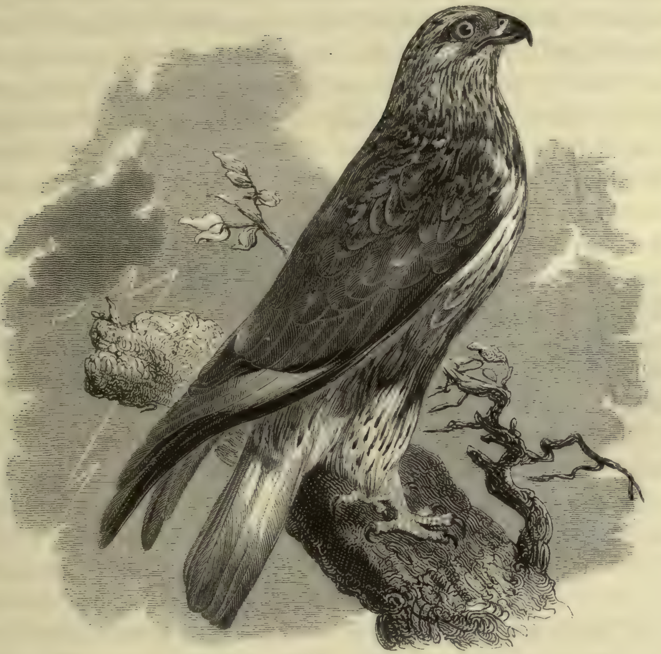
The whole length of the Common Buzzard is from twenty to twenty-three inches, depending on the sex,—the females being the largest; from the anterior bend of the wing to the end of the longest primary fourteen inches and three eighths. In colour this species is subject to very great variation, so much so that in a large series no two may be found precisely alike, and the difference cannot be generally ascribed to age, sex or locality. Some are almost entirely of a yellowish-white with a few brown feathers interspersed, while others are of a nearly uniform dark chocolate-brown. To describe the almost endless intermediate phases of plumage would here be impossible, but the following may give some idea of the ordinary appearance of the Common Buzzard.

The beak is bluish-black, darkest towards the point; the cere yellow, the irides yellowish-brown. The top of the head and cheeks pale brown, streaked longitudinally with darker brown; the back, wing-coverts, upper tail-coverts and the tail above, dark clove-brown, the latter barred with lighter brown, the feathers of the former having lighter-coloured edges; the primaries brownish-black; the chin and throat almost white; front of the neck, breast, under wing-coverts, belly and thighs, greyish-white, spotted and streaked with brocoli-brown; under tail-coverts white; the tail beneath greyish-white, barred transversely with dark wood-brown; legs and toes yellow; the claws black.

Mr. Gurney believes that the variation in the plumage of this species is greater in birds of the first or second year than in those which are older, and that adults may be known by a slight rufous tinge on the tail-feathers. The colour of the iris also varies from a dark hazel to a light brownish-yellow, this last being usually observable in the birds which have the palest plumage. Albino varieties occasionally occur, and of these the Norwich Museum possesses a perfect specimen, obtained at Metz, by Mr. J. H. Gurney, Junior.

The vignette below, is from a sketch of the Buzzard, taken in the garden referred to at page 111.





BUTEO LAGOPUS (J. F. Gmelin*).

THE ROUGH-LEGGED BUZZARD.

Buteo lagopus.

THE ROUGH-LEGGED BUZZARD is at once distinguished from the Common Buzzard last described, by having the tarsi covered, in front and on the sides, with feathers as low down as the origin of the toes, from which fact it has, with some other species possessing the same peculiarity, been removed from the genus *Buteo*, and made the type of a genus *Archibuteo*, a course which has met with the approval of many authorities. In its habits and powers, however, it resembles the Common Buzzard; but it does not exhibit quite the same extent of variation in the colour of the plumage. The Rough-legged Buzzard, although it has been killed in almost every English county, and occurs, occasionally in large numbers, in this country every year, must be regarded as the more rare bird of the two, and is usually observed in autumn or winter. But instances have been recorded of its breeding in Great Britain, the most trustworthy perhaps of which is that mentioned by the late Mr. Williamson of Scarborough, who in a communication made to the Zoological Society in 1836, stated that it "breeds occasionally in a precipitous dell near Hackness," and further particulars on this subject have been supplied to Mr. More (Ibis, 1865, p. 12) by Mr. Alwin Bell. Mr. Edward of Banff also says (Zool. p. 5201) that its nest has been found in that neighbourhood.

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* *Falco lagopus*, J. F. Gmelin, Syst. Nat. i. p. 260 (1788).

The Rough-legged Buzzard appears to prefer much the same kind of habitat as the Common Buzzard; but when it visits the British Islands it rather haunts the open country and especially such districts as abound in rabbits, which with smaller mammals, water-fowl and reptiles constitute its chief food. In some years the number which occurs is very large, and the autumn of 1839 was particularly thus distinguished. Macgillivray (Brit. Birds, iii. p. 736) has noticed its abundance at that time in various parts of this island, as Messrs. Gurney and Fisher have also done with especial reference to the neighbourhood of Thetford. In 1858, according to Mr. Stevenson, it was again numerous in the locality last mentioned. In Scotland it appears also in autumn, and at irregular periods is plentiful, but more commonly on the east than on the west coast. In Ireland several instances of its occurrence are on record.

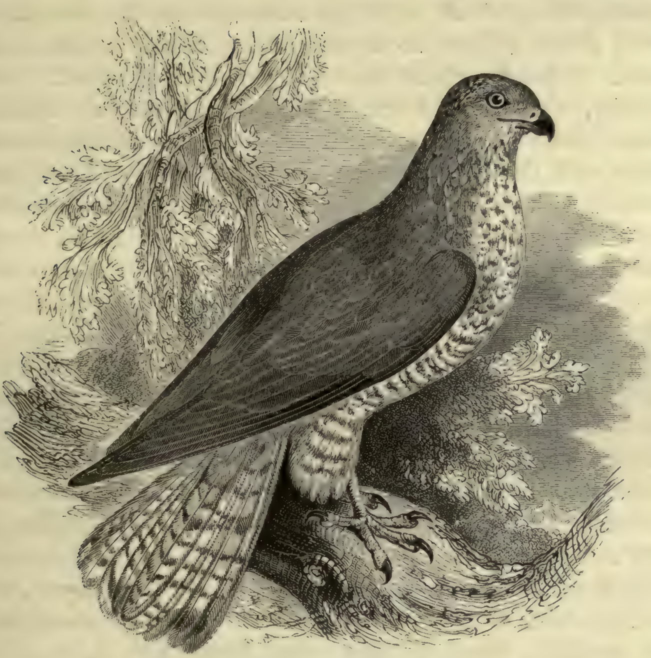
The flight of this bird is slow but smooth, and, except during its migrations, is seldom continued for any great length of time. It generally has its nest on high trees and lays, rather early in the year, from three to five eggs, a very large series of which was obtained in Lapland by the late Mr. Wolley, some of the most beautiful being figured in the catalogue of his collection (Ooth. Woll. pls. v., vi.). They vary exceedingly in colour, shape and size. Some cannot be distinguished from those of the preceding species or of the Kite, while others are tinted and marked almost as richly as the finest eggs of the Golden Eagle. They measure from 2·44 to 1·82 by 1·95 to 1·53 in. Several nests were examined by the accurate and enthusiastic naturalist last named. One, to which he climbed, was in a Scotch-fir of no great size, and contained two young birds, one not many days hatched, the other much larger. They were white, just like young Eaglets. The nest was small, made of old sticks with a few twigs of the fir and a little of the black hair-like lichen which grows so abundantly in the northern forests. The situation was near the edge of a great marsh with trees all around. Other nests were in taller trees and were larger in size, and the bird will occasionally use an old nest of the Osprey. On approaching its haunts in the breeding season the Rough-legged Buzzard will betray its presence by a plaintive wailing which has been compared by some persons to the mewing of a cat, while to the ears of others it sounds not unmusically, though never so much so as the whistling notes of a Kite.

This species inhabits the northern parts of the European and Asiatic continents. In Norway and Sweden it breeds in the higher subalpine districts, and in Lapland, even to the neighbourhood of the North Cape, is the most common bird of prey. In Russia Pallas states that it is somewhat rare, but common in Siberia, even in the extreme north and in Dauuria. Dr. von Middendorff found it breeding on the Boganida, but neither Dr. von Schrenck nor Herr Radde mention its occurrence in Amoor-land or in South-eastern Siberia. The southern limit of its eastern range is unknown, but it has not been taken in India. Messrs. Elwes and Buckley saw examples which had been killed near Constantinople, and Dr. Erhard says that it occurs in winter in the Cyclades, though neither Von der Mühle nor Dr. Lindermayer have observed it in Greece. It occasionally appears in northern Italy, and, according to Savi, Prince Charles Lucien Bonaparte obtained one at Rome. In Savoy it would seem to be somewhat less scarce, but MM. Jaubert and Barthélemy-Lapommeraye term it one of the rarest species of the south of France. It does not seem to cross the Mediterranean, though it has occurred in Sardinia, and, according to Mr. Charles Wright, it is stated that two examples have been recognized at Malta. It has been included by several Spanish naturalists as a bird of their country, but there can be little doubt that the little Booted Eagle, *Aquila pennata*, has been the species they mistook for it, and the same explanation is probably to be given of the statements of Le Vaillant and Sir Andrew Smith as to its occurrence at the Cape of Good Hope.

In northern Germany, especially towards the east, it is a regular winter visitant, and Dr. Borggreve remarks that it frequents the open country in preference to the forests. It breeds in Pomerania, but whether it does so further to the southward seems uncertain. Dr. Kjærbölling quotes authority for a nest being found in Jutland, but its character in Denmark generally is that of a bird of passage. In Holland and Belgium, as with us, it appears to pass the winter. Nearly all the Rough-legged Buzzards which occur in the British Islands are in immature plumage, which in this species, as in so many of the true Falcons, differs from that of the adult by the transverse instead of longitudinal markings of the lower parts. Indeed, mature examples are of a very rare occurrence in this country. Mr. Stevenson says in his 'Birds of Norfolk' that he has only known of four being killed in that and the adjoining county, one of which was trapped in July, 1848, but he has kindly forwarded information of a fifth obtained in the spring of the present year (1871). By many ornithologists the change which this species undergoes in its progress to maturity has been erroneously described or not understood at all. Mr. Gurney is of opinion that the fully adult dress is not assumed until the third year. The old bird has been but seldom represented, there is however a very characteristic figure of it in Naumann's 'Vögel Deutschlands' (pl. xxxiv.) and the beautiful plate in Mr. Gould's 'Birds of Great Britain' leaves little to be desired, while an excellent woodcut from a European example is to be found in Cooper's 'Birds of California,' where as in the rest of North America the true *Buteo lagopus* is represented by a closely allied species, the *B. sancti-johannis*, characterized by its generally more rufous, and sometimes much darker plumage.

As already stated, the Rough-legged Buzzard is subject to some considerable individual variation, and it is impossible in a few words to give a description that shall meet all cases. Some adult birds in the Norwich Museum, however, present an appearance as follows. The beak is dark horn-colour, the cere yellow and irides hazel. The lores are thickly set with black hairs. The top of the head, ear-coverts and back of the neck are white, each feather having a dark yellowish-brown streak along the shaft, which streaks increase in width backward so that less and less of the white is shewn, and in some examples almost all admixture of white disappears upon the back and scapulars, while in others the feathers of these parts are white, with two or more broad and irregular bars, a broad terminal band of dark brown, and occasionally an edging of rust-colour. The upper wing-coverts are similar, but there is usually a good deal of white shewn along the outer edge of the fore-arm and wrist. The primaries are brownish-black, often hoary on the outer web, with a large patch of pure white at the base. The secondaries and tertials are greyish-brown with several bands of blackish-brown and a greyish-white tip. The lower part of the back deep brown, the upper tail-coverts white with two or more broad brown bars. The tail is pure white at the base, and then crossed with two or three bars of dark brown, the distal bar being about twice as broad as the others, and the interspaces and tip white, often mottled with greyish-brown and ferruginous. The chin, throat and upper part of the breast, white with a dark brown irregularly shaped patch in each feather, these patches being largest on the sides of the breast, but altogether ceasing across its middle, to reappear suddenly, a little lower down, in the more regular form of brownish-black bars, which extend over the belly and thighs. The under tail-coverts pure white. The feathers of the tibiæ and tarsi sometimes white and sometimes a deep ferruginous, but invariably having numerous bars of dark brown. The feet yellow, the claws dark horn-colour.

The whole length of the immature specimen figured was twenty-four inches; the beak black; the cere and irides yellow; the top of the head, the cheeks, nape and upper part of the neck, pale buff, each feather streaked or patched in the centre with dark brown; the back, wing-coverts and rump, clove-brown, some of the feathers edged with fawn-colour; primaries brownish-black; upper tail-coverts buffy-white, with an angular brown patch near the end of each feather; upper surface of the tail buffy-white on the proximal half, the distal half brown. The chin, throat and breast, fawn-colour, tinged with ferruginous, streaked and patched with brown; the belly almost uniform clove-brown; thighs and tarsi covered with feathers of fawn-colour spotted with brown: the toes yellow; the claws black: under surface of the primaries to the end of the broad part of the inner web, white, from the emargination, brownish-black: under tail-coverts uniform buffy-white: proximal half of the under surface of the tail white, the distal half greyish-brown.



Pernis apivorus (Linnæus *).

THE HONEY-BUZZARD.

Pernis apivorus.

Pernis, *Cuvier*†.—Bill slender, rather weak, curved from the base, the cutting edge of the upper mandible nearly straight; the cere large; nostrils elongated, placed obliquely; the lores closely covered with small scale-like feathers. Wings long and large; the first quill-feather short; the third and fourth feathers the longest; inner webs of the first four deeply notched. Tail long. Tarsi short, half-plumed, the rest reticulated; toes of moderate length and strength; the claws slender and only slightly curved.

The Honey-Buzzard is a rare species in this country, and if not exclusively a summer-visitor the fact is mainly owing to its numbers being increased in autumn by an immigration, which is chiefly noticeable on the east coast, from abroad; those so arriving being mostly birds of the year. It has long been known to breed in England. Willughby, who was the first to give this species an English name, describes two young Honey-Buzzards which he saw in a nest that had formerly been a Kite's. They were covered with white down, through which the dark feathers were appearing, and had been fed with wasp-grubs, lizards and frogs. Pennant in 1766 figured a supposed hen bird which was shot from her nest containing two eggs, and all English naturalists are familiar with the account given by Gilbert White of the nest in a tall slender beech in Selborne Hanger, to which, in 1780, a bold boy climbed and brought down the single egg it contained. In 1794 Dr. Heysham mentioned that it had bred in Cumberland. For some time however it was usually thought that there was no more recent instance of the Honey-Buzzard breeding in this country, though the British Museum contained a specimen from Cornwall with its primaries not fully grown, and Mr. Gould in 1837 was aware that the species bred annually at Burnham Beeches (Mag. Nat. Hist. N.S. i. p. 539), while not long after Macgillivray recorded a nest with three eggs taken in Aberdeenshire. In 'The Zoologist' for 1844 (p. 237) the late Mr. Wilmot gave an interesting account of a pair of birds, shot in Wellgrove Wood near Henley-on-Thames, in 1838, which had a nest with two eggs, one of which is now in the Wolley Collection, while the skins of the parents are in the possession of Mr. Fuller-Maitland. Mention was in the same place made of a pair killed at Stoneleigh in Warwickshire in 1841, which also had a nest. Since this time instances have been recorded of the Honey-Buzzard breeding in Northumberland, Shropshire, Staffordshire and Northamptonshire—to say nothing of the New Forest, where it still almost yearly breeds or attempts to breed, for between the desire of collectors to possess specimens and of gamekeepers and idlers to provide them, it has but little chance of accomplishing its end. Mr. Henry John Elwes and Mr. Beaven Rake have kindly contributed some valuable information on this subject, but in the interest of the birds no true naturalist would wish that the precise particulars should be at present published. The nests are said to be generally placed in a tall oak, between twenty-five and fifty feet from the ground, and are built externally of dead sticks, some as large as a finger, with lichens adhering, the interior being formed of smaller twigs and lined with wool and freshly plucked oak and beech-leaves.* The persecutors of this very harmless bird are by no means content with taking its eggs: they succeed wherever it is possible in destroying the parents as well, and there can be little doubt, if the present state of things is allowed to go on, that the species will be soon extirpated in this locality. Three seems to be the full number of eggs laid by the Honey-Buzzard. They have a buffy-white ground which is usually more or less entirely obscured by large blotches of dark brownish-crimson or orange-brown, in most specimens distributed pretty equally over the shell, but occasionally collected in a broad zone round the middle, or forming a cap at either of the ends. A variety which is not so very uncommon much resembles some eggs of the Peregrine Falcon. They measure from 2·06 to 1·91 by 1·73 to 1·49 in.

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* *Falco apivorus*, Linnæus, Syst. Nat. Ed. 12, i. p. 130 (1766).

† Règne Animal, i. p. 322 (1817).

In Scotland a second nest has been of late years taken in Aberdeenshire as stated on the authority of Mr. W. C. Angus, and according to Mr. Robert Gray a very considerable number of birds have been killed at various places and times, but most frequently in the east, and two examples, curiously enough, in winter. In Ireland the occurrence of this species is much rarer, but several instances are on record.

According to the best information available the following is an outline of the Honey-Buzzard's geographical distribution. It breeds in the southern parts of Norway, and examples taken from the nest in that country have been sent to the Zoological Gardens by Mr. Percy Godman, but it is not a common bird there and does not, in the opinion of Herr Collett, cross the Dovre-fjeld. In Sweden it certainly goes much further north, and Wolley obtained its eggs from the neighbourhood of the Finnish frontier some way within the Arctic circle. Pallas states that it has been observed throughout Russia and Siberia, but the enterprising ornithologists who have more recently explored the most northern and eastern parts of Asia have not met with it, though it occurs in Japan, whence there is a specimen in the Leyden Museum, and Père David has obtained it in autumn near Pekin. It apparently does not inhabit India —the examples from that country, formerly attributed to it, belonging to another species, the *Pernis ptilorhynchus*. In Palestine the Honey-Buzzard is rather scarce, though believed to be a resident, but in Arabia and Egypt, where it is said to be common, it seems to be only a winter visitant. Two specimens have been sent from Natal to Mr. Gurney, and though it has not occurred to Mr. Layard in the Cape Colony, it is believed that the "Tachard" of Le Vaillant, which he says he procured there, is founded upon this species. The Leyden Museum contains two examples from the Gold Coast. Singularly enough it does not seem to have been recorded from Algeria; but Mr. G. W. H. Hay mentions it as passing northward over Tangiers in spring in immense numbers, while Lord Lilford on one occasion observed the return autumnal flight, consisting of many hundreds, crossing the Straits of Gibraltar from Spain to Africa.

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* The Editor has been informed by Mr. Newcome, who has himself observed the fact, that in France the Honey-Buzzard, when it has young, surrounds the nest with a bower of leafy boughs—whether to serve as a screen or a barrier he does not know, and while the bird is so persecuted we in England shall not easily ascertain. The young remain long in the nest and the boughs as they wither are frequently renewed.

Throughout all the countries in which it is found, the Honey-Buzzard seems to be a local bird, but it is a well-known species in almost every part of Europe, and the places where it occurs, even, as it were, accidentally, and is killed are often visited by other examples for several years in succession. Thus Sir William Jardine remarks of one killed in Northumberland:—

"The district around Twizel appears to have something attractive to this species, for, within these few years, several specimens have been procured both in the adult and immature plumage. The bird in question was accidentally observed to rise from the situation of a wasp's nest, which it had been attempting to excavate, or in fact to a certain extent had accomplished, and the large hole which had been scraped, shewed that a much greater power could be employed, and that the bird possessed organs much better fitted to remove the obstacles which generally concealed its prey, than a superficial examination of the feet and legs would warrant us in ascribing to it. A few hours afterwards, the task was found to be entirely completed, the comb torn out and cleared from the immature young; and after-dissection proved that at this season (autumn) at least, birds or mammalia formed no part of the food. A steel-trap, baited with the comb, secured the aggressor in the course of the next day, when he had returned to review the scene of his previous havoc."

Examination has usually proved the food to have been the larvæ of bees and wasps, obtained in the manner above described; but the remains of coleopterous and lepidopterous insects have also been found in the stomach of the Honey-Buzzard, as well as corn, earth-worms, slugs, small birds' eggs and moles, while M. Gerbe discovered a young Wild Duck and a fish in a nest he saw. The feet have been noticed to be covered with cow-dung, shewing that the bird had been searching therein for the grubs it contained. One example is said to have been shot in the act of pursuing a Wood-Pigeon, and Mr. Sterland records the very singular capture in Inkersal Forest of two Honey-Buzzards taken simultaneously in a trap baited with a rabbit.* A bird of this species, kept in confinement, killed and ate rats, as well as birds of considerable size, with great ease and good appetite. Buffon says, that in winter, when fat, the Honey-Buzzard is good eating.

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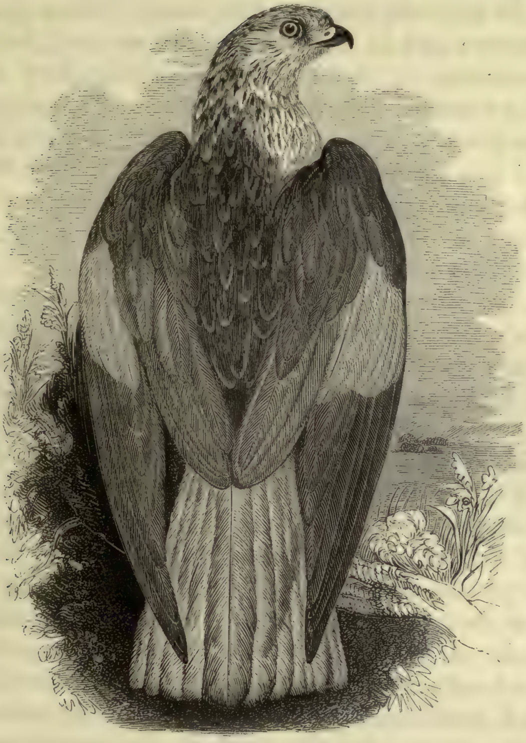
* A somewhat similar instance has long been known to the Editor. A pair of Kestrels, together with a Red-legged Partridge, were found by a gamekeeper in the same trap, which was set at the mouth of a rabbit-burrow. The Partridge must, as is the habit of the species, have been about to take shelter in the hole at the moment when the Hawks seized it. All three birds are still preserved at Cavenham Hall, in Suffolk, where the occurrence took place. An instance of the simultaneous capture of a Falcon and a Stock-Dove is also recorded by the late Mr. Salmon (Mag. Nat. Hist. iv. p. 147).

As was long ago observed by Willughby, the Honey-Buzzard "runs very swiftly like a Hen," and its carriage and the short, rounded feathers which clothe its lores give it the most unhawk-like look of all the British *Falconidæ*. Mr. Newcome, who obtained some young birds from the nest in France, found them, though allowed complete liberty, to be exceedingly tame and domestic. Notwithstanding their familiarity, however, as autumn approached they disappeared, joining no doubt the bands of their brethren migrating southwards at that season.

This species, like some of the true Buzzards, presents remarkable variety in colour and markings, especially in birds of the first or second year; but after the assumption of the uniform ashy-grey head, indicating maturity, there is little irregularity. Some extreme variations are well illustrated in Naumann's work on the birds of Germany, and a series of figures, intending to shew the successive changes of plumage, have been given by Mr. Fisher in 'The Zoologist' for 1842 (pp. 376, 377) and 1843 (p. 793).

The figure and description here given were taken from a specimen in the British Museum, which was killed near York. The beak is black; the cere grey, the irides yellow; the upper part of the head and back of the neck buffy-white, with brown streaks; uniform brown above; the primaries nearly black, the tail above barred transversely with two shades of brown: the front of the neck, breast, and belly, pale yellow-brown; the shaft and middle line of each feather marked by a dark brown longitudinal streak or patch, those of the belly transversely barred: thighs and under tail-coverts varied with yellowish-brown and white; the legs and toes yellow; the claws black. Honey-Buzzards measure from twenty-two to twenty-five inches, depending on the sex. In the young the irides are hazel, but become straw-coloured with age.



CIRCUS ÆRUGINOSUS (Linnæus [*]).

THE MARSH-HARRIER.

Circus æruginosus.

CIRCUS, *Lacépède*[†].—Beak small, bending from the base, compressed and elevated; cutting edge of the upper mandible with a slight festoon. Cere large. Nostrils oval, and partly concealed by the hairs radiating from the lores. Lower part of the head surrounded by a ruff of small thick-set feathers. Wings long; the first feather very short, the third and fourth the longest. Tail long. Tarsi long, slender, and naked; toes rather short, and not very unequal; claws slightly curved, and very sharp.

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[*] *Falco æruginosus*, Linnæus, Syst. Nat. Ed. 12, i. p. 130 (1766).

[†] Mémoires de l'Institut, iii. p. 506 (1800–1801).

The Marsh-Harrier or Moor-Buzzard, as its names import, is generally found on low, marshy lands, or uncultivated moors; and in England was not so many years since very numerous in the fens of Cambridgeshire and the adjoining counties. Its flight is slow, smooth, and generally near the ground. Though from the regular manner in which birds of this genus traverse the surface, looking for prey, like a dog hunting for game, it has been thought that they have acquired the name of Harriers; it seems almost certain that this has been rather conferred from their marauding disposition, since the plundering propensities of the conspicuously-coloured males of the species next to be described, must have made them in old times a well-known terror to the poultry-wives of the districts bordering on their haunts.*

The history of the Harriers as British Birds could not be correctly told without referring to the changes effected by the systematic drainage of the extensive fens of the eastern parts of England from Lincolnshire southward. The result of this process, begun centuries ago but only completed in our own day, has been to bring under the plough many thousands of acres which were formerly overgrown with sedge and sallow-bushes, but now produce an abundance of corn and green-crops. From the districts so reclaimed by the civil engineer, for the good of the agriculturist and through him of the nation at large, the Harriers with many other kinds of birds have been almost entirely banished, and though the naturalist may pardonably lament the consequent diminution and loss of so many interesting members of the fauna and flora of England, he cannot but recognize it to have been fairly incurred in obedience to the law which bids man replenish the earth and subdue it. Here it is impossible to enter into details, but the curious may find in an account of the Isle of Ely, written shortly after the

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* It is worthy of remark that the present species was called by the older English writers, as even of late years by the fenmen, Moor-Buzzard only, and the term Marsh-Harrier, now generally given to it by ornithologists, is certainly a book-name of comparatively modern application.

Norman Conquest,* and in Gough's description † of the East Fen, between Reevesby and Wainfleet in Lincolnshire, written not an hundred years ago, much suggestive material; while a sketch of the chief features of a third part of the fen-country is given in the introduction to Mr. Stevenson's 'Birds of Norfolk' (vol. i. p. liv.). Of the three species of Harrier which once abounded in these very peculiar districts, the present was the first to succumb, and the drainage of Whittlesea Mere in Huntingdonshire, completed in 1851, seems to have given the final blow to its existence as a bird indigenous to this part of the country. Devonshire and the eastern portion of Norfolk are now the only regular breeding-places of this bird in England, according to Mr. More, though its nest may be occasionally found in Cornwall, Somerset, Dorset, Hampshire and Shropshire. In Wales, Suffolk, Cambridgeshire, Huntingdonshire, Lincolnshire and the counties from Yorkshire northward it has become historical. In Scotland, on the same authority, Aberdeenshire furnishes the only locality where it breeds regularly, though it does so occasionally in the counties of Perth, Banff and perhaps Argyll, while a nest is said to have been once known in the Orkneys. Mr. Robert Gray says that the birds which occur in the northern kingdom have generally been in the first or second year's plumage, and that, though on the whole scarce, there are some districts, such as Nether Lochaber and Appin, in which it is comparatively common. In Ireland Thompson says it was resident in suitable localities throughout the island, and Mr. Watters considered it the most abundant of the larger birds-of-prey.

Like the other species of the genus the Marsh-Harrier roosts on the ground, and by day may be seen sitting on a stone, post or low bush, or beating round and round the reeds which skirt the water in search of prey, in its choice of which not much comes amiss—small mammals or birds, the young of larger ones, and wounded animals of all kinds that can be seized on the ground, reptiles and fishes; but perhaps water-rats and frogs form its chief food, and birds' eggs are an irresistible delicacy. The nest is generally on the ground among sedge, in a bunch of reeds, fern or furze, or at the base of a sallow-bush, but a few instances of its being placed in a tree are recorded. It is formed of sticks, rushes or coarse grass. The eggs are three or four in number, white with a pale greenish tinge, and sometimes slightly spotted with light reddish-brown. They measure from 2·08 to 1·84 by 1·58 to 1·44. While the hen is sitting her mate may be observed for the greater part of the day soaring to a considerable height.

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* Liber Eliensis. (Edited for the Society *Anglia Christiana* by D. J. Stewart.) London: 1868. vol. i. p. 231.

† Camden's 'Britannia.' London: 1789. vol. ii. p. 271.

On the continent this species does not extend far towards the north. In Norway it has occurred but very seldom and only in the extreme south. In Sweden it breeds in suitable localities of the southern and midland provinces, as also in Œland, but it is not known to have occurred in Finland. In Russia and Siberia it is common enough, according to Pallas, but Herr Radde considers that the statement only refers to the western districts of the latter, for he met with it but twice in the east, and neither Dr. von Middendorff nor Dr. von Schrenck mention its occurring to them. Captain Blakiston obtained it in Japan, whence also there is a specimen in the Leyden Museum. It is generally spread throughout India, and not unfrequently, says Mr. Jerdon, carries off wounded birds from the sportsman. De Filippi met with it at Tiflis, and it has been obtained by English travellers at Trebizond, Erzeroom and Smyrna. In Palestine it is very common throughout the year in open places, and it breeds, according to Dr. A. E. Brehm, in the Delta, but Dr. von Heuglin never observed it in Egypt in summer. Mr. Blanford saw it occasionally in the highlands of Abyssinia. Mr. Ayres has obtained it in the territory of the Trans-Vaal Republic. It occurs in Algeria, but seems to be scarce there and at Tangiers; Mr. Drake, however, states that it is common in Eastern Morocco. Ledru many years ago observed it at Teneriffe in the Canary Isles, but Dr. Bolle did not. Mr. Saunders describes it as being abundant throughout Spain, and positively swarming in the marshes of the Guadalquivir. In France it is apparently far less common, though it breeds in the singular district of the Camargue at the mouth of the Rhone. In parts of Belgium and in Holland it is numerous, and it breeds also in Denmark and Germany, while in Turkey it is said to be more abundant than any other bird-of-prey.

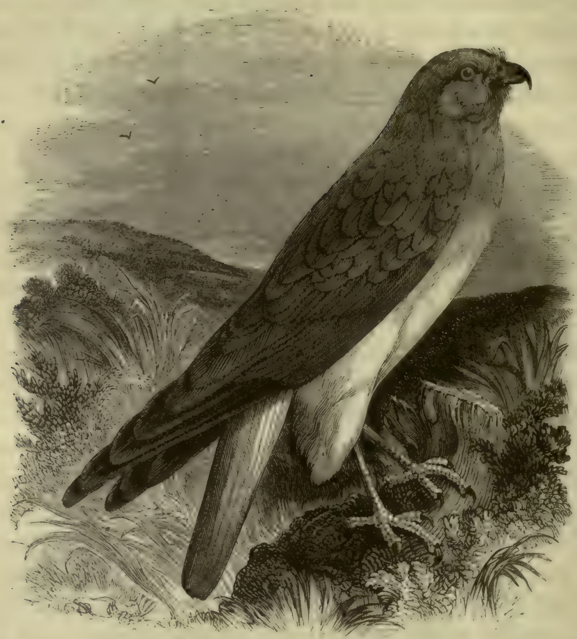
The length of the Marsh-Harrier is from twenty-one to twenty-three inches, depending on the sex; wing fourteen and a half inches. The figure here given was taken from an adult male in the British Museum. The beak is bluish-black; the cere and irides yellow; the top of the head, cheeks and nape of the neck, yellowish-white, tinged with rufous, and streaked with dark brown; the back, wing-coverts and tertials, dark reddish-brown, with lighter margins; the primaries brownish-black; the secondaries and tail ash-grey. It is possible that this state of plumage is not assumed till the third moult. In birds that are still older, the wing-coverts and tertials in addition become partially or entirely ash-grey; the primaries slate-grey; the chin and throat nearly white; the breast rufous, streaked longitudinally with dark brown; belly, thighs and under tail-coverts, reddish-brown, each feather streaked with dark brown; the legs and toes yellow; the claws black.

In young birds of the year, the whole of the plumage is chocolate-brown; the feathers tipped with lighter reddish-brown: the irides then are yellowish-hazel and remain so in the females at all ages.

In the second year, the head, neck, chin and throat become dull yellow, with occasionally a patch of the same colour on the carpus, or anterior point of the wing. The figure given by Bewick represents a bird in this stage.

Messrs. Elwes and T. E. Buckley mention a specimen of a deep brown, almost black, all over.

"Duck-Hawk," "Harpy," and "White-headed Harpy," are names occasionally bestowed on the Marsh-Harrier.



CIRCUS CYANEUS (Linnæus[*]).

THE HEN-HARRIER.

Circus cyaneus.

The decided difference in colour between the males and females of most of the Harriers when adult is a subject now well understood; but in no species is it more conspicuous than the present. The old male, from his almost uniform ash-grey colour, as seen in the figure, is often called provincially the "Dove-Hawk," "Blue Hawk" or "Miller," and by the more general name of Hen-Harrier. The female, or "Ringtail," as will appear from the description at the end of this article, is entirely different; and a representation of the head of one forms the subject of the vignette, in which the circular ruff around the face—a character more or less exhibited by all the species of the genus, is distinctly seen. Though it had been previously supposed by many naturalists that the Hen-Harrier and the Ringtail were the male and female of the same species, others held the opinion that they were distinct, and Montagu seems to have been the first who actually and clearly proved that the remarkable difference between these two birds was but a sexual peculiarity.

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[*] *Falco cyaneus*, Linnæus, Syst. Nat. Ed. 12, i. p. 126 (1766).

These birds inhabit flat marshy situations, fens, low moors and commons, partially covered with furze, heather, sedge and low bushes. They feed indiscriminately on small mammals, birds, and reptiles: twenty lizards were found in the stomach of one killed near London. They have been considered to be particularly destructive to the eggs and young of gallinaceous birds, and consequently their destruction has been much compassed by those who desired to preserve their poultry or their game, though the almost entire disappearance of this and the other species of Harriers from their chief haunts, especially in the east of England, is due rather to agricultural improvements which have brought into cultivation large tracts of what was formerly waste land. Their flight, performed apparently without much labour, is easy and buoyant, but not rapid, and, except in the breeding season, generally within a few feet of the surface of the ground, which they examine with great care, making close and diligent search for any object of food. They have been observed to hunt the same ground regularly; and a male bird has been seen to examine a large wheat-stubble thoroughly, crossing it in various directions, always about the same hour in the afternoon, and for many days in succession.

The nest is placed on the ground; the materials collected to form it are ordinarily but few, consisting of small sticks and coarse grass; when however it is placed on low wet ground, so large a quantity of flags, sedge and reeds are brought together as to raise it from eighteen inches to four feet above the surface, as Mr. Hewitson was informed by one of his correspondents. The eggs are four or five in number, white or very slightly tinged with bluish-green, and occasionally marked with a few spots of yellowish-brown. They measure from 2·05 to 1·63 by from 1·56 to 1·32 in. The male is said to assist in the process of incubation, and has been shot on the nest. The young are hatched early in June, and are at first covered with white down.

The Hen-Harrier, though formerly numerous in the fenny district known as the Great Bedford Level, was probably never a very common bird in England. Owing perhaps to its greater adaptability to circumstances it was however more generally distributed in the breeding-season than the preceding species, and, even a few years since, the information gathered by Mr. More shews that it then continued to breed regularly in several English counties—Devon, Somerset, Dorset, Gloucestershire, Monmouthshire, Lincolnshire, Yorkshire, Durham and Cumberland, as well as in both North and South Wales. Occasionally too, nests were then found in Hampshire, Sussex, Kent, Norfolk (in which county four fledglings were taken in July, 1870), Shropshire and Northumberland; but it had ceased to breed in Wiltshire, Suffolk, Cambridgeshire, Huntingdonshire, Northamptonshire and Nottinghamshire, though in some of these only very recently. In Scotland the same diligent collector of facts ascertained that it yet bred regularly in the counties of Wigton, Lanark, Selkirk, Haddington and Stirling, in nearly all the Highland shires, the Hebrides and Orkneys, and occasionally in the Shetlands. Mr. Robert Gray states that it is a very common species on all the Hebrides, where it is known by a Gaelic name signifying "Mouse-Hawk." In Ireland, according to Thompson, it is pretty generally distributed over the island, and its nest has been found in various suitable localities; but, in Mr. Watters's opinion, it is of considerable rarity in the eastern portion, though he has known it to breed on the Wicklow mountains.

On the continent of Europe this species is very generally distributed. In Norway, according to Herr Collett, though it is said to occur so far to the north as East Finmark, a single nest only has been known and that in Hedemark. Wolley found it breeding in Lapland considerably beyond lat. 68° N.; and in Finland it seems to be spread throughout the country. In Russia and Siberia it is said, by Pallas, to be a very common bird, especially in the desert of Great Tartary. Later travellers describe it as breeding in Dauuria, and Dr. von Middendorff obtained one still further to the north-east, on the river Amgar, whose waters flow into the Lena. It is said to occur in Japan, but Prof. Schlegel refers specimens from that country to the American representative species, of which more will be said presently. Mr. Swinhoe states that it occurs in China as far south as Canton. In India it has only been found as a winter-visitant to Bootan, Nepaul, Kumaon and the north-western Himalayas, though perhaps extending to the plains of the Punjaub. It has been obtained at Erzeroom, and Canon Tristram says it is common and resident in the open country of Palestine. In North-east Africa Dr. von Heuglin found it to be a winter-visitant only, and it goes as far south as Kordofan and Abyssinia. It occurs in Algeria and Eastern Morocco. Returning to Europe it is common in Spain, but chiefly in winter, according to Mr. Saunders, and in France is sufficiently well known as the *Busard Saint Martin*. Within the limits thus traced it occurs very generally.

Whether the Hen-Harrier of America be really identical with that of the Old World is a point that has been long debated, but may be now regarded as satisfactorily settled. The American bird, *Circus hudsonius*, can be recognized by its longer tarsi, and the adult male has the plumage of the lower parts constantly marked with more or less numerous brownish spots. Occasionally, but very rarely, the adult male of *C. cyaneus* exhibits, as Mr. Stevenson has remarked, slight dashes of red on the lower parts of the body and under tail-coverts, in this respect somewhat resembling that of the species next to be described, but not to be mistaken for the American bird.

The whole length of the male is about eighteen inches; the bill bluish-black; the cere and irides yellow; the radiating hairs on the lore, black; the whole of the head, neck, back, wing-coverts, wings and upper surface of the tail, ash-grey; with the occasional exception of a mottled brown spot on the nape of the neck, the last remaining portion of the former brown plumage; the primaries nearly black, the first the shortest and the lightest in colour, the longest not reaching to the end of the tail; the chin and throat ash-grey; the breast and belly lighter in colour, becoming bluish-white; thighs and under tail-coverts white; under surface of the tail pale greyish-white, with traces of five darker bars; the legs and toes yellow; the claws black.

Young males are brown, like the female to be next described, but begin to change to the grey, which distinguishes the sex, in their second autumn; young males are smaller in size, and have the irides lighter in colour than those of females at the same age. It is probable that young males are capable of breeding in their second year, before they have acquired their grey plumage, as two brown birds, apparently performing the duties of parents, have been shot at the same nest.

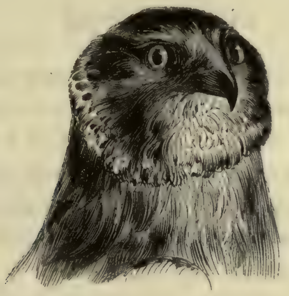
The female measures about twenty-one inches in length; wing from the anterior bend fifteen inches; the bill almost black; the cere greenish-yellow, the irides reddish-brown; the top of the head and back of the neck umber-brown; the feathers of the latter with lighter reddish-brown edges, forming a collar of spots on the neck; over the eye a light-coloured streak; ear-coverts uniform umber-brown; the ruff round the face formed by short feathers of mixed brown and white colours, passing from behind the ear on one side round under the chin to the back of the ear on the other side; the back and wings uniform umber-brown; the smaller wing-coverts margined with ferruginous; primaries blackish-brown; upper surface of the middle tail-feathers uniform umber-brown; the lateral tail-feathers dark-brown, barred with lighter reddish-brown; the tip of all the feathers pale ferruginous; the throat, breast, belly, thighs and under tail-coverts, reddish-buff colour, each feather having an elongated reddish-brown patch in the middle, with a still darker shaft; those of the thighs and the under tail-coverts being lighter in colour, and less decidedly marked than those of the body;

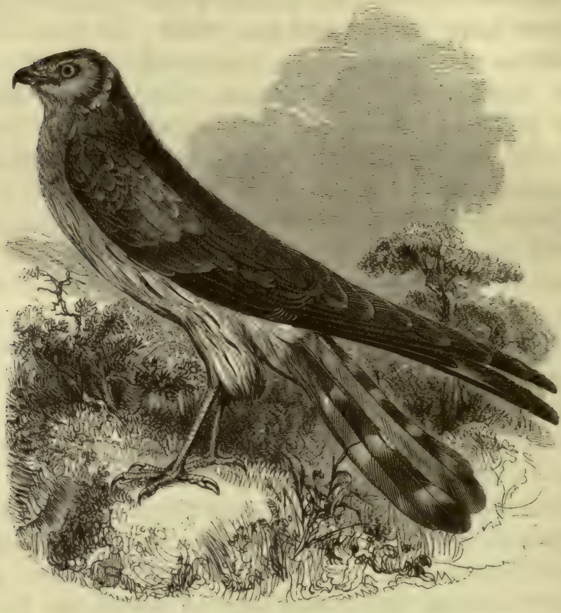
under surface of the middle tail-feathers strongly marked with broad bands of brownish-black and dull white; the outer feathers on each side greyish-white, with four darker transverse bars; the legs and toes yellow; the claws black.

Examples of this species are occasionally found of a more or less uniform dull black colour. One such in the collection of Dr. de Montessus is recorded by MM. Degland and Gerbe, and another by MM. Jaubert and Barthélemy-Lapommeraye.

In reference to our Harriers a writer in 'The Naturalist' for 1837 (p. 314) remarked that some difference had been observed in the relative length of the quill-feathers: in a female the fourth quill-feather being the longest; in a male, the third. This notice is here adverted to in order that the relative length of the different quill-feathers in the wings, when referred to in description, or as affording indications of distinction in species, may not be too much relied upon without having due regard to the period of the year at which the birds were killed. In this country particularly, a large proportion of our cabinet specimens are obtained in autumn, the gun being then in general use, and during that period the quill-feathers will frequently be found not to have attained their ultimate relative proportions.

The vignette represents the head of the Ringtail, as mentioned above.





CIRCUS CINERACEUS (Montagu*).

MONTAGU'S HARRIER.

Circus Montagui †.

THE specific distinction of this bird was first demonstrated, in 1802, by Colonel Montagu, who named it the Ash-coloured Harrier; but in consequence of a suggestion made in the first Edition of this work, English ornithologists have very generally followed the example set them by continental writers and commemorated the discoverer of this species by calling it Montagu's Harrier.

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[*] *Falco cineraceus*, Montagu, Ornithological Dictionary, vol. i. (unpaged) (1802).

[†] Vieillot, Nouv. Dict. d'Hist. Nat. xxxi. p. 411 (1819).

Specimens of Montagu's Harrier of either sex may be readily distinguished from those of the Hen-Harrier, although about equal to them in length, by being much more slender in shape, and not near so heavy, the average weight of Montagu's Harrier being about nine ounces and a quarter, that of the Hen-Harrier about thirteen ounces; the tarsus is shorter; the third quill-feather, or remex, of the wing is also much more pointed, and the wings are also longer in proportion, whence probably it is that the flight of Montagu's Harrier is sufficiently different from that of the preceding species to admit of easy recognition at a considerable distance by any person conversant with the appearance of the two birds on the wing: the present being much quicker in its movements and more strikingly buoyant than the Hen-Harrier. In their general habits and in the sort of country to which they are most partial, however, both species are very similar.

The food of Montagu's Harrier consists chiefly of grasshoppers, reptiles, small mammals, birds and their eggs—these last, if their size permit, being often swallowed whole. In proof of its fondness for reptile food, Mr. Rodd has recorded the fact that an example of this species, though its attention was attracted by a trap baited with a rabbit, continued to hover about without pouncing, but, on a viper being substituted for the rabbit, the bird was immediately caught. The nest and eggs resemble those of the Hen-Harrier, but the former is more slightly built and the latter are generally smaller, measuring from 1·72 to 1·51 by 1·39 to 1·25 in. While the hen is sitting, she is carefully attended by the cock, who brings her food for which she flies to meet him, and on his dropping it, will catch it in the air. In this, as in several other species of birds-of-prey, incubation often commences as soon as the first egg is laid, and consequently it is not unusual to find a considerable difference in the age of the young, which, according to Mr. Jenyns, are usually hatched about the second week in June.

Though at one time the most numerous species of Harrier in the fens of the Eastern Counties, and that which, in spite of the changes caused by the reclaiming of that extensive district, continued to breed there later than the others, there seems to be no county in the British Islands where Montagu's Harrier may now be said to breed regularly. According to Mr. More, its nest was until the last few years, or, may be, still is occasionally found in Somerset, Dorset, Pembrokeshire, Kent and Norfolk. At Hickling, in the county last named, four young birds, which in Mr. Stevenson's opinion had been bred in the neighbourhood, were killed in August, 1870. Of the other English counties, such as Devon (where Montagu first found it breeding), Suffolk, Cambridgeshire, Huntingdonshire, Shropshire, Cumberland and Northumberland, in all of which there is more or less satisfactory evidence of its nests having formerly been found, none have been recorded for several years past, and the species bids fair shortly to become no longer indigenous, though Mr. J. H. Gurney, Junior, reports the capture, during the present summer (1871), of a pair, with their nestling young, near Bridlington in Yorkshire. Already in some of the counties where it used to be so abundant, it must now be regarded as an irregular autumnal migrant.

Montagu's Harrier has been met with in Scotland, but is of rare occurrence and has been only noticed there of late years. The report of its having bred in Sutherland, made by two writers, but apparently resting on the same authority, seems to require confirmation. Mr. Robert Gray, however, mentions a specimen now in the collection of Mr. E. S. Sinclair of Wick and said to have been shot in Caithness, which is probably the most northern locality on record for this species. In Ireland as we learn from Mr. Watters it has only occurred in two instances, once near Bray and once at the Scalp in the county of Wicklow.

According to the best authorities Montagu's Harrier is, or was, a common bird in Belgium and Holland where it breeds. In the western parts of North Germany it seldom occurs though Dr. Borggreve states that it certainly breeds in Mecklenburg and Anhalt, but Gloger reports it as being commoner in Silesia. From the Scandinavian ornithologists we learn that it has been observed during the whole summer in Denmark and is supposed to breed there, but it is unknown in Norway: in Sweden only a few examples have been taken and these in the extreme south, and in Finland its appearance is merely accidental. Nothing seems to have been recorded with certainty as to its distribution in European or Asiatic Russia; but from the facts that Mr. Swinhoe gives it as occurring on the river Yang-tsee in China, while Mr. Jerdon says that it is abundant and migratory in every part of India, and Mr. Gurney has seen it from Ceylon, one may pretty safely infer that it is to be found at least in the southern parts of Central Asia, and the Leyden Museum possesses a specimen from the mouth of the Jaik. Ménétries saw it only in the Caucasus, where it is rare; Mr. Abbott procured it at Trebizond, and Canon Tristram obtained it twice in Palestine. In Egypt it occurs on passage and is abundant in the highlands of Abyssinia in winter and spring. It is also found in Sennaar and Kordofan. Mr. Layard saw many examples and killed one on one of the Comoro Islands, and, although rare, it has been several times obtained in the Cape Colony and in Damara-land. Loche gives it as breeding in Algeria, and Mr. Drake saw it on several occasions in Eastern Morocco, while M. Bertholet records it from the Canaries. In Portugal Prof. du Bocage says that it is common, and Mr. Saunders that it is resident throughout the year in southern Spain, where it is tolerably numerous. In some parts of France it would seem to be very abundant; thus, in the Department of the Vienne, near Loudun, M. Barbier Montault states in an interesting account of its habits, in the 'Revue Zoologique' for 1838, that he has seen it, at the close of the breeding season, not merely by hundreds but by thousands, the birds collecting towards evening to roost in company; and it may be observed of this species as of the preceding that it seldom if ever perches, but passes the night on the ground among rough herbage or heather.

The length of the adult male is about seventeen inches. The beak is nearly black; the cere greenish-yellow; the irides bright yellow; the head, the whole of the neck, back, wing-coverts, secondaries and tertials, bluish-grey; the secondaries with three dark cross-bars, the last of which is visible externally when the wing is closed; the primaries almost black; upper surface of the middle tail-feathers bluish-grey; the lateral tail-feathers white, barred with reddish-orange; breast, belly and under tail-coverts, white with various longitudinal streaks of reddish-orange; under wing-coverts barred with reddish-brown; under surface of tail-feathers dull white, barred with dusky grey; legs and toes yellow; the claws black.

A young male, from which the figure was taken, killed while undergoing his second moult, and in a state of gradual change, has the top of the head and the feathers round the cheeks a mixture of brown and rufous, ear-coverts grey; occiput varied with white; the nape, back, scapulars, tertials and upper tail-coverts, lead-grey; upper surface of all the tail-feathers, except the two in the middle, barred with two shades of brown and rufous; middle tail-feathers, with the outer webs uniform pearl-grey; the inner webs with five dark brown bands on a greyish ground; primaries and secondaries blackish-brown; greater wing-coverts dark brown; lesser wing-coverts lighter brown varied with rufous, and two or three grey feathers: chin and front of the neck, pearl-grey; breast, belly, thighs and under tail-coverts, white, with a longitudinal rufous stripe on the middle of each feather; under surface of tail-feathers barred with greyish-white and brown; legs, toes and claws as in the adult.

A young male in the plumage of the first year has the head and neck ferruginous, each feather with a median lanceolate patch of dark brown; back and wings umber-brown; wing-coverts with broad ferruginous margins; primaries brownish-black; secondaries and tertials tipped with rufous: upper tail-coverts white, tipped with red; upper surface of the tail-feathers with five bands of dark brown, and four bands of greyish-brown; ear-coverts uniform umber-brown; chin, throat, breast, belly, thighs and under tail-coverts, uniform reddish-brown; under surface of wings the same; under surface of tail-feathers dull reddish-white, with four or five bands of brownish-grey; legs, toes and claws, as in older birds.

The adult female measures nineteen inches; the wing fifteen; the beak black; the cere dull yellow; the irides hazel; crown of the head and nape reddish-brown, with darker brown spots; above and below the eye a streak of dull white; ear-coverts dark brown; back and wings dark umber-brown; rump and upper tail-coverts mixed with white and orange brown; upper surface of middle tail-feathers uniform dark brown; lateral tail-feathers barred with two shades of brown; breast, belly and all the under surface of the body, light reddish brown, with longitudinal marks of a darker colour; legs and toes yellow; claws black. In very old females the general colour of the plumage is lighter and the irides become bright yellow. Young females have the whole of the under parts from the throat to the under tail-coverts of a uniform reddish-bay, without any of the darker-coloured streaks observable in the adults.

This species exhibits not unfrequently a dark brown or almost black variety, which is the origin of the *Circus ater* of Vieillot, and has several times been killed in this country. The intensity of the tint varies in individuals. Sometimes the male is of a very dark smoky-grey, and the female of a deep chocolate-brown with a beautiful purple gloss. Mr. Newcome possesses an adult dark-coloured female shot from the nest.

Having thus described the last of the British *Falconidæ*, it may be desirable, before quitting this group, to exhibit a representation of the breast-bone, or sternum, of one of the types of the Family, in order to shew in the form and magnitude of the principal bone, and the other bones attached to it, the power of flight possessed by these birds, of which the breast-bone affords good comparative indication.

The power of flight is one of the decided characteristics of the organization of the Class of Birds; and the Family of the *Falconidæ* includes some of those birds which appear to possess this power in the highest degree of perfection.

The conditions necessary to produce this power in its fullest extent are,—large and strong pectoral muscles; great extent of surface, as well as peculiarity of form, in the wing: and feathers of firm texture, strong in the shaft, with the filaments of the plume arranged and connected to resist pressure from below. The extent of surface, the form and other peculiarities of the wings, have been already noticed, and the anatomical part only requires to be briefly described. A certain degree of weight is necessary to flight*, and this is imparted by large pectoral muscles; the power of these muscles may be estimated by the depth of the keel, and the breadth of the sides of the breast-bone or sternum; as affording extent of surface for the attachment of those large muscles by the action of which the wings are moved.

As an illustration of this form, the figure, inserted as a vignette, on the opposite page, is a representation about one-fourth less than the natural size of the breast-bone of a young male Peregrine Falcon, which exhibits the depth of the keel, the breadth of the sides, as well as the strength of the coracoid bones; and the power of flight peculiar to all the species of Falcons is still further illustrated by the form and substance of the forked bone or furcula, commonly called the merry-thought or wish-bone, which is circular, broad and strong, affording a permanent support to the shoulders. This furcula represents the clavicles of mammals.

Though the subject of the figure may be taken to shew the general form of the sternal apparatus in the *Falconidæ*, various members of the Family present some differences which it may not be inexpedient to notice briefly. Thus the size of the foramina or holes pierced in the posterior portion of the sides of the breast-bone varies not inconsiderably in certain species. In the Eagles of the genera *Aquila* and *Haliæetus* these foramina usually disappear entirely, each side of the breast-bone consisting of an uninterrupted convex plate, and the posterior portion is somewhat tapering instead of being broader than the middle. In the Osprey (*Pandion*) the hinder margin is still further altered in outline, and it is possible that this peculiarity may be in some way connected with the bird's habit, as described, of taking its prey under water: for, as will subsequently be mentioned, species whose nature it is to seek their food by diving, and are thereby subjected to a greater or less amount of pressure in proportion to the depth of water, not unfrequently undergo a considerable modification of this part of the sternum as compared with those nearest to them in general structure, but not so expert in their subaquatic feats.

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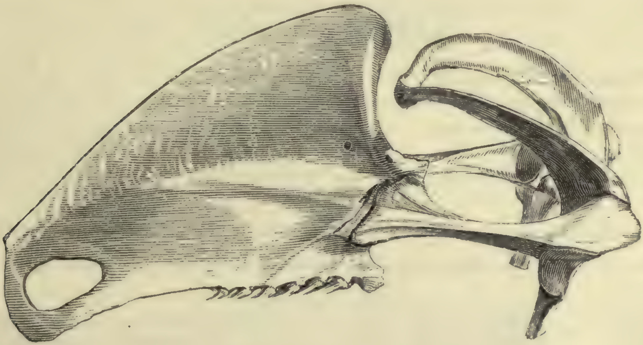
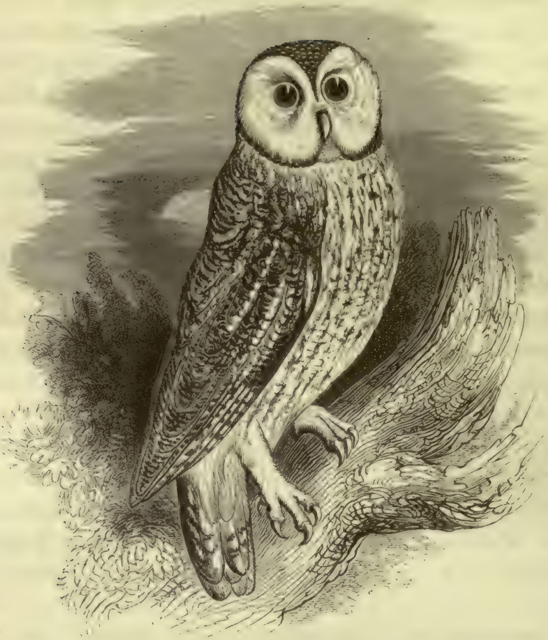
* Those who wish to study the mechanics of flight cannot do better than consult Prechtl's 'Untersuchungen über den Flug der Vögel' (Wien: 1846) and Prof. Marey's 'Mémoire sur le vol des insectes et des oiseaux' as published in the 'Annales des Sciences Naturelles' (Zoologie, 5th ser. vol. xii.). In English the essays of Dr. Pettigrew (Trans. Linn. Soc. vol. xxvi.) and Captain F. W. Hutton (Phil. Mag. August, 1869) may also be mentioned in connection with the same subject; but some of the conclusions of both the writers last named have been impugned.

By an extended examination of the different species of Buzzards and Harriers, it will be found that the characters described as necessary to produce rapid flight decline gradually. The sternum decreases in size, the keel loses part of its depth and the coracoid bones and furcula become more slight.

A representation of the sternum of a Vulture has already been given and that of an Owl will be immediately inserted, to afford a comparative view of the size and structure of the same parts in these Families of the Birds-of-Prey.





STRIX ALUCO, Linnæus[*].

THE TAWNY OWL.

Syrnium stridula[†].

STRIX, *Linnæus*[‡].—Bill decurved from the base. Nostrils large. Facial disk large and complete; ears large and furnished in front with a large, crescentic operculum, broad below and tapering above. Wings short and rounded; the first quill very short, the fourth the longest. Tail long, concave beneath. Legs and toes feathered. Head large, round and without tufts.

THE characters and appearance of Owls are so singular that once seen they are not readily forgotten. The head is large, the expression grotesque, the body bulky in appearance, the plumage soft and downy. Unlike the *Falconidæ*, which hunt for their food by day, nearly all the Owls seek their prey during the twilight and probably during the greater part of the night. From their nocturnal habit, the singular appearance produced by the arrangement of the feathers of the face, the peculiar hollow tone of voice, and the additional circumstance of some of the species selecting ruins or buildings in grave-yards as places of resort, for the solitude there afforded, Owls have been considered by the superstitious in all countries and at all times as birds of darkness and ill-omen, and by some even as messengers of doom. Thus Shakespear says—

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[*] Syst. Nat. Ed. 12, i. p. 132 (1766).

[†] Stephens, Gen. Zool. xiii. part ii. p. 62 (1826).

[‡] Syst. Nat. Ed. 12, i. p. 131 (1766)

> 'Out on ye, Owls! nothing but songs of death'—*Richard the Third.*

The eyes of Owls are large, and particularly susceptible of impressions from light. If exposed to the glare of day, most of the species seem to be overpowered by it, and their eyes are either closed entirely or screened by an internal eyelid. Their flight is easy, buoyant and noiseless. The species vary greatly in size and, according to their several powers, their food consists of mammals, birds, reptiles and occasionally fishes; while, chiefly among the smaller kinds, twilight-flying beetles and large moths are also the object of search. Owls, like the other birds-of-prey, as already mentioned, return by the mouth the indigestible parts of the food swallowed in the form of elongated pellets; these are found in considerable numbers about the usual haunts of the birds, and examination of them reveals the nature of the food, and shews in nearly every case the great services they render to man by the destruction of rats and mice.* But the Owls differ from nearly all the *Falconidæ* in their feathers wanting the accessory plumule or aftershaft, and in their œsophagus being of uniform width throughout and devoid of the large dilatation which forms the crop. Further, they possess large cœca, while these are wanting in all the Hawk-tribe so far as is known.

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* The infallibility of the evidence thus afforded as to the food of Owls is as complete as the way of obtaining it, by those who have the opportunity, is simple. Several German naturalists have made some very precise researches on this subject. The following results with regard to our three commonest species of Owls

The Owls have usually been arranged in two principal groups, one in which all the species exhibit two tufts of feathers on the head—the so-called "horns" or "ears," and the second in which the head is not tufted. However convenient this plan may be, it helps their classification but a short way, and when it is considered that these tufts are but superficial appendages and occasionally wanting in species otherwise closely resembling those that are tufted, it is plain that more essential characters must be sought before a natural arrangement of the whole family is reached. Such characters may doubtless be found on a closer examination of the structure which the various groups present; but hitherto no person seems to have placed on record the results of a sufficient investigation of this subject. It is therefore with some diffidence that the Editor proposes to depart from the arrangement followed in former issues of this work; but, having been favoured by Mr. Salvin and Mr. Sclater with an abstract of their scheme for classifying the Owls, he trusts that his adaptation of it in the following pages will be at least of some service in directing attention to a matter which has long been a puzzle to systematic

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are those afforded by the investigations of Dr. Altum as communicated by him to the German Ornithologists' Society during its meeting in 1862:—

	No. of Pellets Examined.	Remains found.							
		Bats.	Rats.	Mice.	Voles.	Shrews.	Moles.	Birds.	Beetles.
Tawny Owl	210	...	6	42	296	33	48	18(1)	48(4)
Long-eared Owl	25	...	...	6	35	...	...	2(2)	...
Barn-Owl	706	16	3	237	693	1590	...	22(3)	...

[1] 1 Tree-Creeper, 1 Yellow Bunting, 1 Wagtail, 15 small species undetermined.

[2] Species of Titmouse.

[3] 19 Sparrows, 1 Greenfinch, 2 Swifts.

[4] Besides a countless number of Cockchaffers.

ornithologists, and may finally lead to more satisfactory results: it being understood that on some points, which are chiefly of detail, the scheme projected by his friends is not strictly observed, and that they accordingly are not responsible for any of the statements here made.

A cursory examination of the sternum shews that in the Owls this important bone presents two very distinct forms: one, which is incomparably the most usual, wherein the hinder margin is characterized by the possession of two or four more or less deep clefts, and the other form, in which this margin is entire or slightly sinuated. Though in a general way no great reliance is to be placed upon characters drawn from the posterior portion of the sternum, it is thought that in the present case this one may be trusted, for it is found to be combined, in the uncleft form, with others: the absence, for instance, of the manubrial process in front of the sternum and the junction of the broad keel of that bone with the furcula; the remarkable distribution of the feathers upon the breast, which is almost singular among Birds*; the peculiar shape of the fold of skin, or operculum, which lies over the orifice of the ear; the straightness of the beak at its base, and the serrated middle-claw. In all these characters the Barn-Owl and its allies differ from other Owls, and therefore, by whatever generic name they are called, they seem to stand as one of the chief groups and one, perhaps, equal in systematic value to that which may be briefly characterized by the fissured sternum and includes all the rest of the genera. This other group may further be easily subdivided into the Owls which possess an operculum to the ear and the Owls which do not, and it will be sufficient here to state that to the first of these subdivisions belong the Tawny, Tengmalm's, the Long-eared and Short-eared Owls, and to the second the remainder of the species which will be included in this work. It thus follows that no dependence is placed in this arrangement upon the tufts of feathers—the so-called "horns" or "ears," while the structure of the real ear and the form of its conch are regarded as of considerable value; and, giving due weight to the fact that the power of hearing in Owls is very likely more acute than in most other birds and is of greater help to them in procuring their prey than the sense of sight, the importance attached to the characters therewith connected does not seem to be exaggerated.

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* See Nitzsch's 'Pterylography.' Ray Society's Translation, pp. 70, 71.

The difficulties which beset the classification of the *Strigidæ* are not limited to the determination of their natural affinities, but extend to their scientific nomenclature, which has long been in a most confused state. Under the generic term *Strix* Linnæus arrayed all the Owls known to him, but Brisson most justifiably divided that genus, and in so doing fixed upon the *Strix aluco* of his contemporary as its type. Though most ornithologists have disregarded that determination and have retained the original word for the Barn-Owl, it seems that Brisson's assignment of the term must, according to strict rule, be followed, and therefore it is here adopted for the *S. aluco* of Linnæus, the Tawny or Brown Owl.

The Tawny Owl is a common bird in most well-wooded districts of this country, where its numbers have not been diminished through persecution, and is strictly nocturnal in its habits, seldom moving or leaving its place of concealment during the day, and appears, more than any other species of Owl, to be incommoded by bright light. It inhabits parks abounding in hollow trees, thick woods, or strong plantations of evergreens, and at nightfall issues forth to seek its food, sometimes visiting small enclosures about farmhouses, at others taking a wider range over the neighbouring fields. It feeds chiefly on small mammals, particularly the short-tailed field-mice or voles, and the true mice, rats, shrews and moles, with beetles. It sometimes takes small birds, and several writers have proved that this Owl feeds occasionally on fish, and is able to catch species that swim near the surface in deep water, as well as those that are to be found among stones in the shallowest parts of brooks.

The eggs of this species are smooth and white, measuring from 1·96 to 1·68 by 1·64 to 1·43 in. These, to the number of three or four, are usually deposited in a hole in a tree, and, according to Mr. Jenyns, are hatched in April. Mr. C. B. Wharton, however, has recorded (Ibis, 1866, p. 324) a nest which was placed on the ground, and Mr. Robert Gray says that it sometimes lays its eggs in the deserted nest of a Rook. Occasionally here, and in Sweden not unfrequently, it avails itself of the accommodation afforded by a barn or loft, in a retired corner of which it will prepare its simple nest. For a considerable time the young, covered with a greyish-white down, are fed at home; they afterwards perch among the branches of trees near the nest, where the parents long continue to feed them, and, until summer is far advanced, the call of the Owlets, sounding like the word "keewick," may be heard at intervals from the leafy shade. In captivity the young of this species are said to be more easily reared than other Owls, being much less choice in the quality of their food. The note of the adults, most frequently heard in the evening and about an hour before dawn, is a loud, clear hoot, by some persons considered melancholy, but in the opinion of others more rightly termed by Shakespear "*Tu-whit! to-who!* A merry note." In the act of hooting, the Owls' throats, as remarked by Gilbert White, "swell as big as a hen's egg."

The Tawny Owl may be traced through all the counties of England, but has not been recognized by practised ornithologists as existing in Ireland. It occurs also in Scotland, and there, unlike what is certainly the case in England, it is said by Mr. Robert Gray to be becoming commoner, owing to the spread of plantations, so that, from having been a comparatively scarce species thirty years ago, it is now well known in suitable haunts from the Border to Ross-shire, where it breeds, extending its range even to some of the Inner Hebrides, as Islay and Mull. Low includes it among the birds of Orkney that are seen in summer, but not in winter.

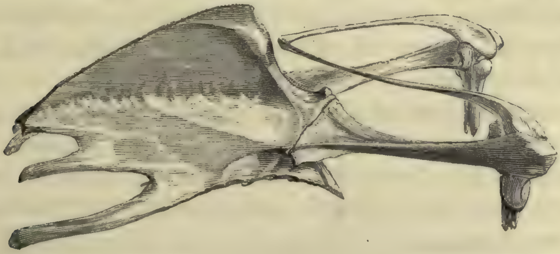
In Norway, according to Herr Collett, the Tawny Owl is common in the southern and western parts up to the Trondhjem fjord, and has even been obtained so far to the northward as lat. 67°; but lat. 64° is the limit assigned for its breeding-range both in that country and in Sweden, where it is, in Prof. Nilsson's opinion, the commonest species of Owl. Whether it has occurred in Finland seems doubtful. In Russia, according to Pallas, it is much less frequent than in the rest of Europe, but though seen by him in the southern provinces was never observed in Siberia. Major Irby saw it two or three times in the Crimea. Von der Mühle and Dr. Lindermayer state that it occurs in Roumelia, the latter adding that it breeds in Greece. Strickland procured it at Smyrna, and Canon Tristram states that he saw many about the celebrated cedars of Lebanon and heard its hoot night after night in the forests of Gilead, where its nest was found. The assertion that it is common in Egypt is probably incorrect, but Loche gives it as breeding in the wooded parts of Algeria, and Mr. Tyrwhitt Drake found it in numbers in caves at Tetuan. In Portugal, according to Mr. A. C. Smith, it is nowhere common, but in the higher wooded districts of southern Spain Mr. Saunders says it is not uncommon, and this also seems to be the case in Sicily. It does not appear to be found in Sardinia; but it occurs in Italy and thence in suitable situations and with greater or less frequency throughout the remainder of the continent.

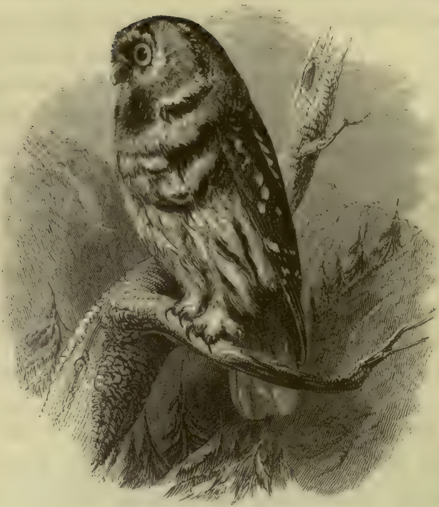
The adult male has the beak whitish-horn colour: the eyes large and full; the irides very dark brown, almost black: the facial disk greyish-white, defined by a dark brown marginal line; top of the head, neck, back and wings, a mixture of ash-grey, mottled with two shades of brown; a descending line of white spots at the edge of the scapulars, and another on the end of the wing-coverts; primaries barred with dull white and dark brown, the wings only reaching half-way down the tail; upper surface of the tail-feathers barred with two shades of brown, the middle pair being the most uniform in colour. The under surface of the body greyish-white, mottled and streaked longitudinally with pale and dark brown; under tail-coverts white; under surface of tail-feathers greyish-white, barred transversely with reddish-brown; legs and toes covered with short greyish-white feathers; claws horn-white at the base, darker towards the tip. The whole length about fifteen inches. The prominent pink edges of the eyelids give this Owl a singular appearance.

The female is larger, but when perfectly adult, resembles the male in colour. Younger birds are often more ferruginous. The plumage first assumed by the nestlings is drab or inclining to grey. British examples seem to be certainly more rufous than those which are commonly obtained on the Continent, in some parts of which grey birds decidedly predominate in number, if they do not occur exclusively. It may be observed that it is common to many species of Owls to have both a rufous and a grey or brown plumage, and it is not always possible to account for the discrepancy through sex or age.

Messrs. Buckley and Elwes mention a "perfectly black Owl" in the collection of Mr. Robson at Ortakeuey, near Constantinople, which they consider to have been a melanite variety of this species. Mr. Gurney is of opinion that Algerian examples exceed in size those from Europe and Western Asia.

The vignette represents the sternum of this species, which when compared with that of the Falcon previously figured, shews a great deficiency in strength. The keel has but little depth, the sides are narrow, while the furcula is especially slender and weak. In some Owls the median portion of the furcula is not ossified, and the lateral portions are only connected by a ligament.





NYCTALA TENGMALMI (J. F. Gmelin*).

TENGMALM'S OWL.

Noctua Tengmalmi.

NYCTALA, *C. L. Brehm* †.—Bill short, decurved from the base; cere rudimentary; nostrils nearly circular; under mandible notched. Ears large, asymmetrical, and furnished in front with a well-developed operculum. Facial disk large and nearly complete. Wings long, rounded. Tail short. Legs and toes thickly feathered. Head large, the asymmetry of the aural region extending to the skull.

THIS prettily-marked Owl was, in 1783, first clearly distinguished from other species by Tengmalm, a Swedish Ornithologist, in honour of whom it was named by Johann Friedrich Gmelin.

Though similar in size and general appearance to the Little Owl to be presently described, it can at once be recognized by the more thick and downy character of the plumage, and by the length and abundance of the feathers covering its short legs and toes, to say nothing of the more recondite differences which a closer examination will reveal. It has no doubt been sometimes mistaken for the Little Owl, and possibly obtained in this country more frequently than it has been recorded; since the "Little Owl," figured in the folio edition of Pennant's 'British Zoology,' was probably of this species; while that engraved by Bewick and Selby, under the same name, certainly is so, as the Editor is informed by Mr. Hancock who has seen the specimen, killed at Widdrington in Northumberland in January, 1812 or 1813, and now in the Selby Collection at Twizell House. The same gentleman adds that he has had three examples of Tengmalm's Owl all taken near Newcastle-on-Tyne: the first, which was recorded by Mr. Bold (Zool. p. 2765), was shot at Whitburn, in October 1848; the second at Rothbury, in April 1849; and the third was caught alive at Widdrington some twelve years since. In 1836, a specimen recently shot was purchased in a poulterer's shop in London; and in May of the same year, the late Mr. Leadbeater received a specimen for preservation which had been shot in Kent. Messrs. Gurney and Fisher (Zool. p. 1305) record a sixth, which was taken some years since at Bradwell in Suffolk, and Dr. Morris mentions (Zool. p. 2649) an example obtained at Hunmanby in Yorkshire about the year 1847. In 1856 the Editor saw in the collection of Mr. William Felkin, of Beeston near Nottingham, a specimen which he said he had received in the flesh from near Liverpool. Mr. Borrer records (Zool. p. 5988) the capture of an example, near Horsham on the 27th of March, 1857, which is now in his collection. Mr. Stevenson mentions an adult female, killed at Burlingham in Norfolk, about the 6th of April, 1857, and now in the possession of Mr. H. N. Burroughes, and has kindly forwarded the further information that an example was caught alive at Beechamwell in the same county, on the 27th of January, 1849, and is now in the collection of the Rev. E. W. Dowell of Dunton. On the authority of Mr. Braikenridge, Mr. Gould mentions a specimen killed at Winscombe in 1859, and, lastly, Mr. Boulton records (Zool.

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* *Strix tengmalmi*, J. F. Gmelin, Syst. Nat. i. p. 291 (1788).

† Isis, 1828, p. 1271.

p. 9020) a fourteenth English example taken at Flamborough in October, 1863. Mr. Robert Gray mentions the occurrence of three specimens in Scotland: one killed in Sutherland in 1847, one in Orkney in 1851 and the third caught alive on Cramond Island in the Firth of Forth in December, 1860. In Ireland it does not seem to have occurred.

This little Owl inhabits thick forests in Norway, Sweden and Russia, even in very high northern latitudes, but though its eastern limits cannot be precisely stated, it would seem not to extend very far into Siberia. Dr. William Carte obtained it in the Crimea. In parts of Denmark it is said to occur not uncommonly and to frequent the churches. In Holstein, Boie states that it is a regular autumnal migrant, arriving with the Woodcocks. Though local it is well known throughout the larger forests of Central Europe. Lord Lilford saw the skin of one which he was assured had been shot in Corfu, and Dr. Lindermayer states that it occurs though rarely in the northern parts of Greece. Egypt has been given as a locality for this species, but apparently in error, since Mr. G. R. Gray has kindly forwarded the information that a specimen in the British Museum, on which the statement seems to rest, had been wrongly determined. Tengmalm's Owl inhabits the Alpine forests of Italy, Switzerland and south-eastern France, while it also occasionally occurs on the Vosges and in the Ardennes.

Not much if anything very satisfactory was known respecting the breeding-habits of this species until Wolley announced to the Zoological Society in 1857, that in Lapland it lays its eggs in holes of trees or in the nest-boxes which are set up by the inhabitants for the Golden-eye Ducks; and once established it is not easily made to leave its quarters, being able, it is said, to keep possession against a much larger bird. The eggs are smooth and white, four or five in number, and measure from 1·43 to 1·15 by 1·09 by ·98 in., an exceptionally small one being only ·76 by ·68 in. The food of this Owl consists of mice and large beetles. Its call-note is said to be a very musical, soft whistle.

In America this species is represented by the closely-allied *Nyctala richardsoni,* which is smaller and not so much spotted.*

The beak is yellowish-white; the irides yellow; the top of the head, nape, back and wings chocolate-brown, with minute white spots on the top of the head, and larger white patches on the back and wing-coverts; some smaller white spots on the lower or distal part of the outer web of the wing-feathers are arranged so as to give the appearance of bands; tail-feathers clove-brown above and greyish-white beneath, with soiled white spots forming interrupted bars; tail-feathers extending nearly an inch beyond the ends of the wings. Facial disk soiled white; round the eyes a dark ring forming a band, which is broadest on the inner side; the ends of the feathers extending over and hiding the base and sides of the beak; neck, breast and belly greyish-white, indistinctly barred and spotted with clove-brown; under tail-coverts dull-white without spots; tarsi and toes covered with soiled white feathers, slightly speckled with brown; claws black. The whole length of the bird is from eight and a half to nine inches.

The kindness of Herr Robert Collett of Christiania in communicating to the Editor a description of the skull of this species, together with an illustrative specimen, enables him to mention briefly the extraordinary fact that the asymmetry displayed by the region of the ears in Tengmalm's Owl extends to the configuration of the skull. It had already been stated by Dr. Kaup (Transactions of the Zoological Society, vol. iv. p. 206) that the ear-orifices in the Owls of this genus were asymmetrical; but, so far as the Editor is aware, no one had suspected that the irregularity was more than skin-deep. Herr Collett's observations on this subject will doubtless be immediately laid before the public, and it would be unfair to the discoverer of this, at present, unique feature in the structure of birds, to anticipate them here.

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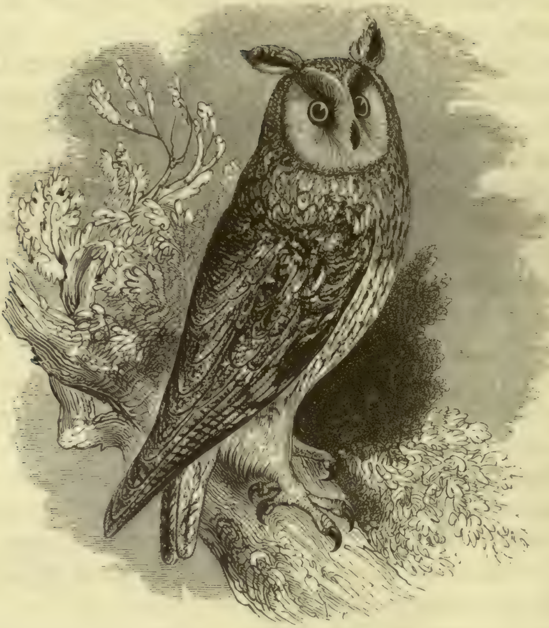
* The late Sir William Milner recorded (Zool. p. 7104) the supposed occurrence, near Beverley in Yorkshire, of another allied American species, the *N. acadica.*



ASIO OTUS (Linnæus*).

THE LONG-EARED OWL.

Otus vulgaris†.

ASIO, *Brisson*‡.—Beak decurved from the base; cere large; under mandible notched. Nostrils oval, oblique. Facial disk complete. Conch of the ear extremely large, with a semicircular operculum running the whole length in front, and a raised margin behind; auditory opening asymmetrical. Wings long; the second quill-feather generally the longest. Legs and toes feathered to the claws. Head furnished with two tufts, more or less elongated.

THE LONG-EARED OWL, from the variety and beauty of the markings on its plumage, is a very handsome species, and by no means uncommon in most wooded districts. Indeed owing to the general increase of plantations, and especially of those formed of the evergreen firs, it is probably year by year growing more numerous throughout the country. It does not require a large, or even very retired wood, a few comparatively-small but thick trees afford it sufficient shelter during the day, when it seldom if ever stirs from its roost, unless disturbed. It then noiselessly flaps its broad wings and sails away to some other perch, displaying great self-possession, and apparently but little incommoded by the glare even of the noon-tide sun.

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* *Strix otus* Linnæus, Syst. Nat. Ed. 12, i. p. 132 (1766).

† Fleming, British Animals, p. 60 (1828).

‡ Ornithologie, i. p. 677 (1760).

This species of Owl remains in this country throughout the year. It makes little or no noise, except when young, so that even where most abundant its existence is often least suspected. It feeds chiefly upon rats, mice and voles, but small birds occasionally enter into its dietary. In the stomach of one individual, Selby found five skulls of mice; and one I examined contained the remains of a Goldfinch. Mr. Gould mentions that one of his correspondents had recognized the remains of the Wheatear, Willow-Wren, Yellow Bunting, Chaffinch, Greenfinch and Bullfinch in the pellets rejected by this Owl, and it possibly obtains these birds by taking them when at roost.

The Long-eared Owl makes no nest for itself, but usually takes to the deserted habitation of some other bird, when of sufficient size for its own wants; or more often rears its young in the old drey of a squirrel. The eggs are four or five in number, oval, smooth and white, measuring from 1·78 to 1·45 by 1·35 to 1·21 in. The young, hatched by the end of April, are then covered with white down, and do not quit the nest during the first month; when they do, says Selby, "they take up their abode in some adjoining tree, and for many subsequent days, indeed for weeks, may be heard after sunset uttering a plaintive but loud call for food; during which time the parent birds are seen diligently employed in hawking for prey."

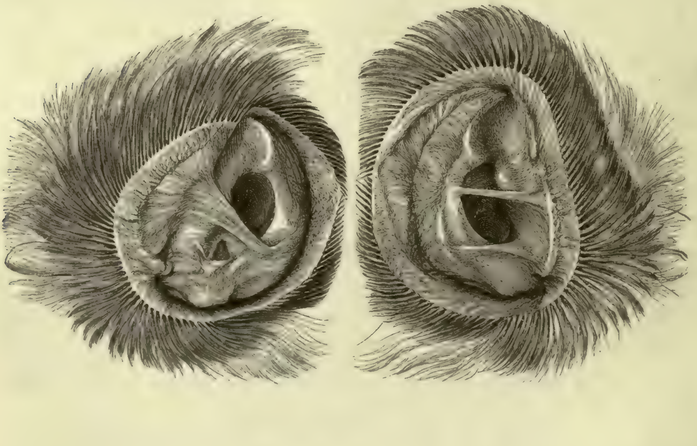
The Long-eared Owl inhabits Great Britain from Cornwall to Caithness, and in the eastern counties its numbers receive an addition by migration in autumn. In Scotland, according to Mr. Robert Gray, it is less common on the western than on the eastern side, but it breeds in some of the Hebrides, though altogether absent from the outer islands of the chain. It has occurred twice in the Orkneys, and Mr. Saxby mentions (Zoologist, s.s. p. 1762) his having obtained one in Shetland in October, 1868. In Ireland, Thompson says that it commonly inhabits old wooded districts in all parts of the island.

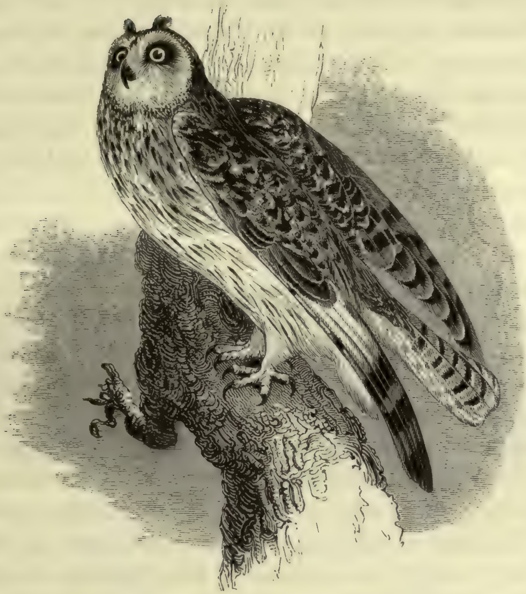
This species is found in all the countries of continental Europe and over a great part of Asia. It has been received from Iceland, and has occurred in the Færoes. In Norway and Sweden, according to Herr Wallengren, it breeds as far to the north as lat. 64°, and Wahlberg shot one near Luleå, while it remains throughout the winter near Upsala. It is tolerably common in southern Finland and throughout the Russian Empire to the Sea of Ochotsk. Mr. Henry Whitely obtained it at Hakodadi in Japan, and Mr. Swinhoe says it is more or less common in many parts of China. Mr. Hume believes it to be a permanent resident in the Himalayas, where it occurs from Nepaul to Cashmere, and Mr. Jerdon informed him that it is by no means rare in low jungles near Delhi and thence through the Punjab. Ménétries found it in the forests of Georgia, and Mr. Abbott obtained it at Trebizond. It occurs in Palestine, but not often and only in the wooded districts and highlands. According to Dr. von Heuglin, it is a common, but apparently not an annual, winter-visitant to Arabia Petræa and Lower Egypt. It occurs also in Algeria, but is not marked by Loche as breeding there; and, according to Dr. Bolle, it is found in the Canaries, while Mr. Frederick Godman obtained a young bird, taken from the nest, in the Azores. In Portugal Mr. A. C. Smith says it is common; and it is generally distributed and breeds throughout Spain. In France it appears to be the most common of all the Owls. Within the limits thus traced it would seem to occur in every suitable district, breeding as far south as Sicily and the Peloponnesus. In the Cyclades it is a regular winter visitor, and according to Mr. Wright it has occurred at Malta. The Long-eared Owl of America formerly, and still by some ornithologists, regarded as identical with the species of the Old World, is now usually considered distinct, and, in Mr. Gurney's opinion, the American bird, the *Otus wilsonianus* of Lesson, constantly differs from our own in being darker, while, according to Prof. Schlegel, the bars of the plumage are wider and deeper in colour.

Brisson's genus *Asio*, of which the present species is the type, takes precedence of Cuvier's *Otus*, and is therefore here retained, though the latter has been usually accepted.

The exposed portion of the beak is dusky horn-colour; the base and cere are hidden by the feathers of each inner side of the facial disk; the irides orange-yellow; radiating feathers of the facial disk on each outer side pale brown, with a half circular boundary line of darker brown; on the inner side varied with dusky brown at the base, and white towards the tips; the tufts on the head, an inch and a half in length, are formed of about seven or eight feathers, longer than wide, dark brownish-black in the middle, with the inner edges greyish-white, the outer ochreous; top of the head between the tufts a mixture of brownish-black, greyish-white and ochreous; nape, round the neck, and the upper part of the back marked with longitudinal streaks of brownish-black on an ochreous surface; the back, wing-coverts, secondaries and tertials, a speckled mixture of black, greyish-white and brown on ochreous; primaries light ochreous-brown, barred and speckled with darker brown; the second quill the longest, and the wing when closed reaching a little beyond the end of the tail; upper surface of the tail nearly the same but more ferruginous; the breast and belly a mixture of greyish-white and pale brown, with longitudinal streaks and imperfect bars of umber-brown; under tail-coverts, legs and toes nearly to the tip, uniform pale ochreous-brown; tail beneath greyish-white tinged with ochre, with narrow bars of dusky brown; claws horn-colour. The whole length is about fourteen inches.

The asymmetry of the ears in Tengmalm's Owl has been already briefly mentioned and in that bird it seems to attain its greatest development, since the skull itself is affected thereby. In the present species, as figured below, and some others the anomaly, though sufficiently remarkable, is confined to the exterior, the skull remaining symmetrical. But even this curious feature has been noticed by very few writers, and by none, apparently, of our own countrymen. Klein in his 'Historiæ Avium Prodromus,' published in 1750, was the first to announce it (p. 54). It was described, as it exists in the Long-eared and Short-eared Owls, in the 'Mémoires de la Société Royale des Sciences de Liège' (vol. i. pp. 121–124 pl. 3), by Professor Van Beneden, who figured both ears of the former. In 'The Zoologist' for 1845 (pp. 1019, 1020) M. Deby again described the structure in the latter, which seems to be the first allusion to the subject in an English publication. Later, Dr. Kaup mentioned the peculiarity, as observed by him in several species, in his "Monograph of the Owls," originally contained in the 'Contributions to Ornithology' for 1852, and reprinted, with corrections, in the 'Transactions of the Zoological Society' (vol. iv.), where the right and left conchs of the Tawny Owl, the Little Owl and that which is next to be described, are figured.





Asio accipitrinus (Pallas*).

THE SHORT-EARED OWL.

Otus brachyotos†.

The Short-eared Owl is not only pretty numerous as a species, but is also very widely diffused. Unlike the species last described, which haunts woods, this bird frequents wide open fields, extensive heaths, moors and fens, seldom perching upon trees but resting on the ground. A large proportion of the examples seen in this country are winter-visitors that come from the North of Europe in October, and have in consequence been called Woodcock-Owls. There are few sportsmen who, when Partridge-shooting, have not met with this Owl, occasionally in companies of from half-a-dozen to a score. It lies close, but when disturbed will often mount high and seem to suffer no inconvenience from the daylight. Many of those that visit Great Britain in the autumn pass on, while others abide through the winter and retire northward again in the following spring. A few, however, breed in this country from Cambridgeshire northward. Although the fact seems to have been only published in 1833, when Hoy first announced it in the 'Magazine of Natural History,' it is certain that before the draining of the fen-country in the east of England, the Short-eared Owl bred as regularly and as commonly in that district as did any of the Harriers. Now there are left but few sedgy tracts suited to it, though nests may occasionally still be found on the upland heaths. The mistaken zeal of gamekeepers, however, in destroying this and other species of Owls, which are probably the very best friends the preserver of game could possess, precludes the chance of such nests remaining unmolested unless placed in the most unfrequented spots. Some eggs taken at Littleport, in the Isle of Ely, in 1864, are the latest in this part of England, which have come to the Editor's knowledge; but in August, 1854, he saw on a dry heath at Elveden, in Suffolk, two young birds, nearly full grown but unable to fly; and in the same year at least two nests were taken in the fens of the south-west of Norfolk.

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* *Stryx accipitrina,* Pallas, Reisen u.s.w. i. p. 455 (1771).

† *Strix brachyotos,* J. R. Forster, Phil. Trans. lxii. p. 384 (1772).

Mr. Rocke (Zool. p. 9687) believes that this species breeds in Shropshire, and from Yorkshire northward to the Orkneys, there is little doubt that it does so with more or less regularity. Sir William Jardine describes two nests found by him in Dumfriesshire, some forty years ago, with five eggs in each, as being "formed upon the ground among the heath; the bottom of the nest scraped until the fresh earth appeared, on which the eggs were placed, without any lining or other accessary covering. When approaching the nest or young, the old birds fly and hover round uttering a shrill cry, and snapping with their bills. They will then alight a short distance, survey the aggressor, and again resume their flight and cries. The young are barely able to fly by the 12th of August, and appear to leave the nest some time before they are able to rise from the ground." The eggs of this bird, seldom exceeding from three to five in number, are smooth and white, measuring from 1·74 to 1·37 by 1·33 to 1·15 in.

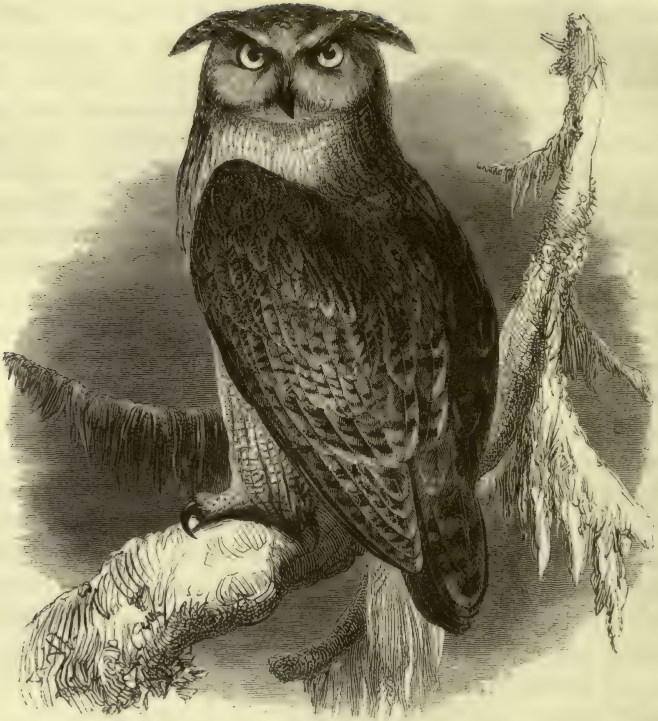
Small quadrupeds and small birds with, according to M. Florent-Prevost, at certain seasons beetles and other insects, form the principal food of this Owl. Montagu found fragments of a Sky-Lark and of a Yellow Bunting in one and Thompson the legs of a Dunlin in another, while the supply provided for some nestlings was, according to Low, a Moorfowl and two Plovers. In the stomach of one examined by myself were a half-grown rat and portions of a bat. Mr. Swinhoe (Ibis, 1861, p. 26) states that an example he procured in China contained a few fish-bones. But undoubtedly field-mice and especially those of the short-tailed group or voles are their chief objects of prey, and when these animals increase in an extraordinary and unaccountable way, as they sometimes do, so as to become extremely mischievous, Owls, particularly of this species, flock to devour them. Thus there are records of "a sore plague of strange mice" in Kent and Essex in the year 1580 or 1581, and again in the county last mentioned in 1648. In 1754 the same thing is said to have occurred at Hilgay near Downham Market in Norfolk, while within the present century the Forest of Dean in Gloucestershire and some parts of Scotland have been similarly infested. In all these cases Owls are mentioned as thronging to the spot and rendering the greatest service in extirpating the pests. The like has also been observed in Scandinavia during the wonderful irruptions of lemmings and other small rodents to which some districts are liable, and it would appear that the Short-eared Owl is the species which plays a principal part in getting rid of the destructive horde. An additional fact of some interest was noticed by Wolley, namely that under such circumstances the Owls seem to become more prolific than usual, and on two occasions it came to his knowledge that as many as seven eggs must have been laid in one nest of this species, so that the statement of Hutchins, cited by Richardson, that in the Fur-countries it lays ten or twelve eggs, may, though not generally credited, be true after all. Another singular statement with regard to this Owl is one made to Mr. Gurney, by the late M. Favier of Tangiers (Ibis, 1862, p. 27), to the effect that in the neighbourhood of that place it sometimes pairs and breeds with a very distinct species, the *Otus capensis* of Sir Andrew Smith—the hybrids presenting an appearance intermediate between the two, even to the colour of the irides.

The Short-eared Owl is well known in most if not all of the counties of Great Britain, and is a regular winter-visitant to Ireland. It seems to have occurred in Iceland, and at one season or another inhabits the whole continent of Europe and the greater part of Asia, reaching to Japan. In China it has been obtained as far south as Canton, and is by no means uncommon in Assam and British Burma. Mr. Gurney has received it from Singapore. As a winter-visitant it is said to be distributed by myriads over the plains of India, but does not seem to extend to Ceylon. Further westward it can be traced through Bochara and Mesopotamia and, though not abundant, occurs in Palestine. It is a winter-visitant in Egypt, sometimes appearing singly and sometimes in large companies, going as far south as Abyssinia. In the same character also it occurs in the islands of the Mediterranean and in Algeria, and it is found in Morocco. The Zoological Society has received a living example from Natal.

In the New World it occurs in Greenland though, according to Professor Reinhardt, a scarce bird there. It is a summer visitor to Newfoundland and to the Fur-Countries of North America, arriving as soon as the snow disappears and departing in September at the close of the breeding-season, when it is spread over the greater part of the continent, occurring in Guatemala and, according to Señor Lembeye, in the island of Cuba. In South America it is also found in the basin of the Rio de la Plata and thence to the Straits of Magellan. According to Mr. W. H. Hudson (Proc. Zool. Soc. 1870, p. 800), it is generally distributed over and breeds on the pampas near Buenos Ayres, where, owing to the greater extent of land cultivated of late years, and the consequent increase of mice, it has become more abundant than formerly. Mr. Darwin met with it in the Falklands where Captain Abbott was informed that it bred, and Prof. Cunningham obtained it in Tierra del Fuego. It is right, however, to remark that the Short-eared Owl of America has been by some ornithologists regarded as distinct from that of the Old World; but in the opinion of those who have had the greatest experience no constant difference can be maintained. In like manner the Short-eared Owl of the Galapagos has also been described as distinct, but there cannot be much doubt of its specific identity with the subject of this article, of which Mr. Gurney has seen typical examples from the Sandwich Islands, while D'Orbigny states that it occurs in the Ladrones.

The head of this species is small compared with that of Owls generally; the tufts about three-quarters of an inch long, formed of three or four feathers, which can be elevated or depressed at pleasure; the beak is dark horn-colour; the irides golden-yellow; the feathers forming the facial disk, almost black at the base, but lighter and mixed with brown towards the end, those pointing in the direction of the beak hiding the cere; the disk surrounded by a whitish border; top of the head, neck, back and wings, patched with very dark brown: the feathers edged with fawn-colour; wing-coverts with a few roundish spots of yellowish-white; primaries pale reddish-brown, barred with dark brown, and ending with speckled ash-grey; tail-feathers buff, with five transverse bars of very dark brown; chin white; all the under surface pale buff, with longitudinal patches of blackish-brown on the neck and breast, and streaks of the same on the belly and flanks; legs, and toes above covered with short, uniform, hair-like, pale buff feathers; toes naked beneath; claws almost black.

The whole length from fourteen to fifteen inches. Wings, when closed, reaching beyond the end of the tail. The females are largest; but the difference in the plumage of the sexes is not very obvious. Pale varieties are not rare.



BUBO IGNAVUS, T. Forster*.

EAGLE-OWL.

Bubo maximus †.

BUBO, *Duméril* ‡.—Bill short, strong, curved, compressed at the point. Nostrils pierced in the cere, large, oval or rounded. Facial disk incomplete about the eyes. Auditory opening, small, oval, without an operculum. Wings rather short, concave; the third and fourth quill-feathers generally the longest. Legs and toes covered with feathers; claws long. Head furnished with two tufts of feathers.

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* Synoptical Catalogue of British Birds, p. 3 (1817).

† Fleming, British Animals, p. 57 (1828).

‡ Zoologie Analytique, p. 34 (1806).

FOLLOWING the arrangement of the Family of Owls previously projected (page 149) the second subdivision of the first chief group of species is now reached—that in which there is no operculum or fold of skin overlying the orifice of the ears. Like the preceding subdivision, this includes as well species which possess as those which do not possess the superficial character of "horns," and, for the sake of convenience those which are so adorned are here taken first.

The Eagle-Owl is one of the largest species of the family, and inhabits pretty generally the northern parts of the Old World; but it must be considered a rare bird in England, an example occurring only occasionally, and at uncertain intervals. Its food consists of the larger sorts of game, such as fawns, hares and grouse, and also of mice, rats and moles. Its cry is a sonorous hoot, which has been syllabled by various writers as "coo-hoo," "ugh-ugh" and "boo-boo."

The nest of this bird is usually on a ledge among rocks, a preference (as is the case with Eagles when occupying a similar site) being shown for a southern aspect, but occasionally in a tree, some six feet from the ground; and also, it is said, on ruined walls. Those seen by Wolley were merely holes scratched in the turf, and had no materials added to the bed thus formed; the eggs of one taken by one of his collectors lay on the sand against the upturned roots of a tree; but some writers say that the nest is large, the materials collected being spread over a surface of several square feet. The female is larger than the male, and produces two or three almost globular, white eggs, measuring from 2·48 to 2·18 by 2 to 1·84 in.

Linnæus, on his journey to Lapland, found this bird and its nest on one of the higher hills of a district through which he passed. The nest contained an addled egg and two young birds: these last were of small size, clothed with long whitish down. He subsequently discovered two other young birds of the same species which were nearly full grown, but unable to fly. Among the many graphic contributions on the nidification of birds made by Wolley to the last edition of Mr. Hewitson's oological work, there is scarcely one superior to the description of a nest of this species, found by that much-regretted ornithologist in the very district where Linnæus saw the nests just mentioned; and the close agreement, even in some minute particulars, of the accounts given by these two observers affords remarkable proof of the accuracy of each.

In the southern and western counties of England, the Eagle-Owl has been obtained in Kent, Sussex and Devonshire. One was caught alive so near London as Hampstead, and it is said to have occurred in Suffolk, Norfolk, Oxfordshire, Derbyshire, Yorkshire and Durham; besides near Swansea in Wales. Some of these instances certainly, and possibly most of them, are due to examples which have escaped from captivity. In Scotland it was said of old time by Sibbald to inhabit the Orkneys, while Messrs. Baikie and Heddle mention a specimen obtained, in 1830, on Sandey, one of the islands of that group. According to Pennant an example was killed in Fifeshire in the last century, and Mr. Robert Gray mentions, on the authority of Mr. Angus, the capture of one in Aberdeenshire, in February, 1866. Other cases of its supposed occurrence have also been given, but a mistake as to the species seems likely to have been made. The only record of the Eagle-Owl's appearance in Ireland rests on an unsatisfactory statement, quoted by Thompson, to the effect that once, after a great storm, four such birds paid a two days' visit to Donegal, but were not seen again.

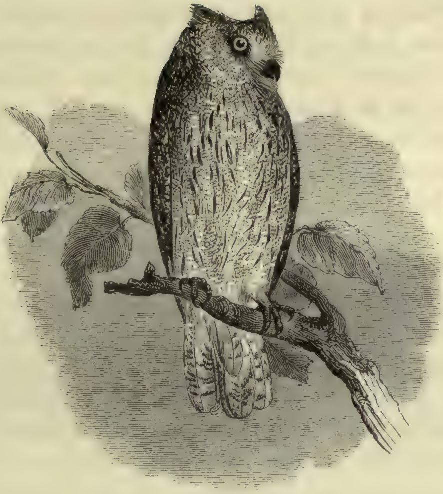
This bird inhabits all the countries of continental Europe, from Lapland to the shores of the Mediterranean, as well as the whole of Siberia, to the furthest corner of Asia; especially frequenting tracts of forest and mountains. It is by no means rare, according to Mr. Swinhoe, in many parts of China, going as far southward as Amoy and Canton. Mr. Jerdon says that it occurs in the higher regions of the Himalayas, whence a specimen was sent to the Calcutta Museum by Captain Smyth of Almorah. Strickland obtained it in Asia Minor. It is not known to occur in Palestine, though occasionally met with in winter in Lower Egypt. It is found in Algeria, but whether it breeds there has not been recorded. It does not seem to occur in Sardinia, though not uncommon in Sicily.

It is well known as a species here, being constantly exhibited in various menageries, where, except during the pairing season, when its peculiar hoot may often be heard, it is mostly quiet, uttering no sound but an occasional sharp and snapping noise made with the bill. It has been known to live to a great age, and has bred in confinement at Arundel Castle, and elsewhere. Mr. Edward Fountaine, who has been remarkably successful in his treatment of birds of this family, has for some years kept many Eagle-Owls at Easton near Norwich, the majority having been reared in his aviaries, and as some of them were hatched from eggs laid by birds bred by him, he may be considered to have, in some degree, domesticated the species.

The foregoing figure was taken from a bird in the garden of the Zoological Society, and the following description from specimens formerly in its museum. The beak is nearly black, the base hidden by the radiating feathers of the facial disk; irides bright orange; the tufts on the head contain seven or eight dark-coloured feathers, with light brown bars on the inner webs; the head, neck and back, a mixture of reddish-brown and dark brown, the darker colour occupying the middle of each feather, forming streaks, the other parts of the web mottled; primaries and tail above similar in colour, but barred transversely; the feathers of the facial disk light brown speckled with greyish-black, those under the disk white; breast pale brown, with longitudinal patches of dark brown; belly, under tail-coverts, thighs, legs and toes, pale brown, with numerous narrow transverse bars of dark brown; tail beneath dusky brown, barred with pale brown; claws black. The whole length from twenty-four to twenty-eight inches, the difference depending upon sex.

In the older nestlings described by Linnæus the bill was black; irides saffron-yellow; pupil bluish-black; the general plumage soft; the wings dark, with reddish-brown spots; feathers of the breast brick-red, with a dark indented longitudinal stripe; wing- and tail-quills still short, blackish, with roundish red spots; feet reddish-brown.

Examples from the colder parts of Russia, and, according to Lord Lilford, those from Albania and Greece, are said to be of a paler tint than those from more western districts, and have been described as forming a distinct species, *Bubo sibiricus* or *B. atheniensis*. In the New World our Eagle-Owl is represented by a kindred species, *B. virginianus*, possessing much the same habits, and also subject to considerable variation in colour. In the south of Europe another species, recognizable, among other characters, by its shorter "horns" is also, though rarely, found. This is the *B. ascalaphus*.



Scops giu (Scopoli *).

THE SCOPS-OWL.

Scops Aldrovandi †.

Scops, *Savigny* ‡.—Beak much decurved from the base, cere small, under mandible notched. Nostrils round. Facial disk incomplete above the eyes; auditory conch small, and without an operculum. Wings long, reaching to the end of the tail; the third quill generally the longest. Tarsi rather long, feathered in front: the toes naked. Head furnished with two tufts of feathers.

This little tufted Owl, one of the smallest of the family found in this country, was first noticed as a British Bird in or about the year 1805, by the then Mr. Foljambe of Osberton and the late Mr. Charles Fothergill from specimens killed in Yorkshire, as announced by Montagu. Other examples, to the number nearly of a score, have since occurred; but at various times of the year, thus shewing that the species which is known as a regular summer migrant in most parts of Southern Europe, arriving and departing with the Swallow, is in this country but a casual visitor; and that we have it at all is probably due to the fact that the examples observed have been stragglers which have lost their way. It is almost strictly nocturnal in its habits, passing the day, according to MM. Jaubert and Barthélemy-Lapommeraye, hidden in thick foliage, or squatting lengthways on a bare branch, and feeds upon mice, shrews, beetles, grasshoppers and large moths. It forms a simple nest in holes of trees, and possibly of walls, or in the fissures of rocks, laying from two to four or five eggs, which are white, and measure from 1·22 to 1·17 by from 1·07 to 1·04 in.

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* *Strix giu* Scopoli, Annus I. Historico-Naturalis, p. 19 (1769).

† Fleming, British Animals, p. 57 (1828).

‡ Système des Oiseaux de l'Égypte et de la Syrie, p. 9 (1810).

The example of this little Owl, which was figured by Selby, was taken near London; and I am indebted to Mr. Joseph Clarke, of Saffron-Walden, for the knowledge of the occurrence of two specimens on the estate of Lord Braybrooke, at Audley End in Essex—all three having been met with prior to November, 1837. Dr. Hastings, in his 'Worcestershire,' notices that one was taken alive near Fladbury. Of those shot in Yorkshire, as already mentioned, Mr. Fothergill's was killed near Wetherby in the spring of 1805, and is the subject of Bewick's woodcut representing this species, while others are in the Foljambe Collection at Osberton. The Scops has been obtained some four or five times in Norfolk, at seasons so opposite as June and November, as well as at Brill, in Buckinghamshire, in the spring of 1833 (Zool. p. 2596) near Pembroke in the spring of 1868 (Zool. s.s. p. 1671), and many years ago, according to Mr. A. C. Smith, in Wiltshire. Mr. Gould mentions the occurrence of one in Berkshire, in 1858, and of another more recently killed by Mr. J. H. Leche of Carden Park, Cheshire. Mr. Rodd has recorded that one was shot at Scilly, in April, 1847, and (Zool. s.s. p. 2482) another taken at Trevethoe on the north coast of Cornwall, early in January of the present year (1871). In Ireland it has occurred twice, once at Loughcrew in the county Meath in 1837, as mentioned by Thompson, and again in the spring of 1847, at Kilmore in

Wexford. In Scotland one example is on record which was shot in Sutherland in May or June, 1854. The story of this species having bred in Castle-Eden Dene in Durham has obtained wide currency but hardly requires serious contradiction.

This little species is almost confined to the temperate and warmer parts of Europe and to North Africa. It does not visit Scandinavia and is rare in Holland, Belgium and North Germany. The limits of its eastward range cannot be traced. There is a specimen from Gurieff, at the mouth of the Volga, in the Leyden Museum, and Major Irby saw it in the Crimea. Messrs. Elwes and Buckley state that it is not uncommon near Constantinople, where it breeds; but they did not observe it elsewhere in Turkey. In Greece Dr. Lindermayer says it breeds in small numbers in Attica but not in the Peloponnesus. In the Cyclades Dr. Erhard states that it is common and resident; but in Corfu Col. Drummond-Hay noticed that it arrived about the 15th of April and Lord Lilford observed it there so late as the 17th of November. In Palestine it is a migrant, returning in spring. It is a bird of passage in Egypt, and extends to Sennaar and Abyssinia in winter. Under the name of *Maroof* it is well known all over Algeria, where it breeds. Returning to Europe it is by no means rare in Portugal, and in Spain is everywhere abundant, even haunting the towns, where its clear ringing note may be nightly heard.* It is not common in France though occurring yearly, and even breeding, says Vieillot, near Paris. In Provence some pass the winter, but by far the greater number leave the country in autumn, at which time they are remarkably fat, and return at the beginning of April. In Italy, in like manner, it arrives in spring and breeds, but in Sardinia it is said by Dr. Cara to be stationary.

This Owl is remarkable for the constancy and regularity with which it utters its plaintive and monotonous cry sounding like "kew, kew," and pronounced at intervals of about two seconds throughout the livelong night. "Towards the end of April last year," says the celebrated entomologist, Spence, writing in 1831, (Mag. Nat. Hist. vol. v. p. 655), "one of these Owls established itself in the large *Jardin Anglais*, behind the house where we resided at Florence; and, until our departure for Switzerland in the beginning of June, I recollect but one or two instances in which it was not constantly to be heard, as if in spite to the Nightingales which abounded there, from nightfall to midnight (and probably much later), whenever I chanced to be in the back part of the house, or took our friends to listen to it, and always with precisely the same unwearied cry, and the intervals between each as regular as the ticking of a pendulum."

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* Lord Lilford was told by a Spanish lady that in Andalucia this species and the Barn-Owl entered the churches to drink the oil in the lamps kept burning there, and that it accordingly behoved all good Christians to kill them!

Thompson relates that when proceeding from Malta to the Morea on the 25th of April, 1841, at a distance of about sixty miles from the coast of Calabria, the nearest land, an Owl of this species on its northward flight came on board the ship, and was captured just as itself had clutched a Lesser Whitethroat.

Mr. J. H. Gurney, Junior, has noticed that the Scops-Owl resembles the Little Owl in its flight, but that it has a much more attenuated appearance when perched, except it be asleep. Then the feathers are so puffed out that the head is undistinguishable from the body. It may be remarked that the attitude assumed by Owls varies much in the different species and is often highly characteristic, though seldom correctly delineated by the draughtsman, who generally makes the posture and expression of the Tawny Owl serve for all the rest.

This little Owl, according to Sir Andrew Smith, goes as far south in Africa as Senegal; but the species described by Swainson, under the name of *Scops senegalensis*, is distinct from that found in Europe, and both are distinct from that named *S. capensis* by Sir Andrew Smith, which is found at the Cape. By his kindness I have been enabled to compare the European Scops with both the African species. To the eastward the European Scops is represented by an Indian species, known among other names as *S. bakkamœna*, with which some ornithologists regard the *S. japonicus* of China and Japan as identical, while others unite this latter to the European bird.*

The beak is black; the irides bright yellow; the feathers of the facial disk minutely speckled with greyish-white and brown, the margin of the disk on each side defined by a darker brown line; from the beak over the top of the head several longitudinal streaks of dark brown on a pale brown ground, forming a median band passing over the head between the tufts, which are short, made up of a few feathers slightly elongated, differing but little in colour from the grey, speckled feathers of the facial disk; the back chestnut and pale wood-brown, mottled with grey, and barred with dark lines; the outer web of the wing-feathers barred alternately with white and speckled brown; tail barred and spotted with black, brown and pale wood-brown; the whole of the breast and belly varied with greyish-white and pale brown, with several decided streaks and patches of umber-brown; under tail-coverts and tail-feathers beneath greyish-white, mottled and barred transversely with brown; feathers of the tarsus brownish-grey with a median streak; toes brown; claws white at the base, nearly black at the tip.

Adult males and females are very similar in plumage, but young birds have a more rufous tinge. Length about seven inches.

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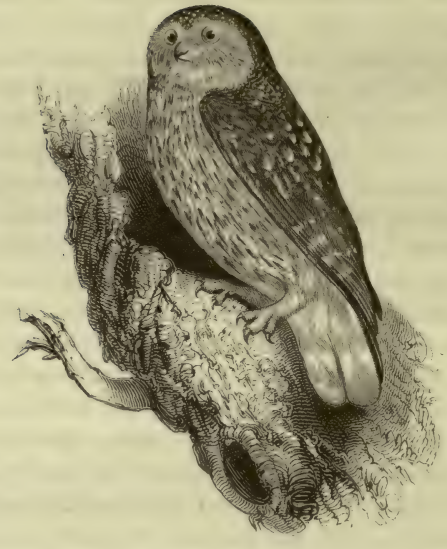
* North America is inhabited by an allied species, *S. asio* (Linn.), of which an example was recorded by Dr. Hobson in the 'Naturalist' for 1855 (p. 169) as having been shot near Kirkstall Abbey in Yorkshire in 1852; and, according to Mr. Stevenson, another specimen is supposed to have been killed near Yarmouth in Norfolk.

ACCIPITRES. *STRIGIDÆ.*



Carine noctua (Scopoli[*]).

THE LITTLE OWL.

Noctua passerina[†].

Carine, *Kaup*[‡].—Beak decurved from the base; cere short and swollen; nostrils oval; lower mandible sinuated. Auditory conch large, the orifice small and without an operculum. Facial disk not well defined. Wings large; the third and fourth quill-feathers nearly equal in length. Legs long, covered with short feathers, and toes above with bristles only. Head round, large and without tufts.

The Little Owl, like several others, can only be considered an occasional visitor to this country, though it has now been taken several times. There is no doubt, however, as has been already mentioned, that from the general similarity in appearance of this and Tengmalm's Owl, they have been more than once mistaken the one for the other. The Little Owl is not strictly nocturnal in its habits, for one observer has seen it, at midday, when the sun was shining brightly, carry off a Sparrow from a flock; but, as a rule, towards the evening it becomes more active and vigilant. It seldom haunts forests; but frequents old buildings, towers, and church walls, where, as well as in hollow trees, and even in a rabbit-hole, its nest is found. The female lays from three to five white eggs of a short oval form, measuring from 1·48 to 1·28 by from 1·2 to 1·09 in. The male takes his turn in sitting upon the eggs, and rearing the young, which are fed upon mice, small birds, frogs, beetles, moths and caterpillars. Its note is said to resemble somewhat that of the Scops-Owl, though the difference between them is easily recognized by those who are acquainted with both.

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[*] *Strix noctua*, Scopoli, Annus I. Historico-Naturalis, p. 22 (1769).

[†] Not *Strix passerina*, Linnæus.

[‡] Skizzirte Entwickelungs-Geschichte und Natürliches System der Europäischen Thierwelt, p. 29 (1829).

In a cage the Little Owl will live for some time if care be taken to supply it sufficiently with mice or birds having their fur or feathers left on. A pair in Mr. Gurney's possession, bred, but did not rear the young. The actions of this species in captivity are grotesque and ridiculous beyond measure. Advantage is taken of them by the continental bird-catchers, who find it irresistibly attractive when tethered near their nets, snares or limed twigs.

Edwards drew his figure of this Little Owl, from a specimen caught alive in a chimney in London; and a second example was taken about the same time in a similar situation, in the parish of Lambeth. Since then about a score of examples are said to have been observed in England, in the counties of Kent, Sussex, Surrey, Middlesex, Norfolk (where its nest is stated, by Hunt, to have been taken), Cambridge, Derby, York, Westmoreland, Flint, Worcester, Wilts and Devon; but the species does not seem to have been noticed either in Scotland or Ireland. Some of the occurrences on record are possibly due to the importation from the continent of living birds which have escaped from captivity or have been intentionally liberated. Thus in 1842, Waterton, who has given, in his usual entertaining style, an account of the proceeding, started from Rome with a dozen of young Little Owls in a cage, five of which surviving the vicissitudes of the journey, he released from their confinement at Walton, near Wakefield, in the May of the following year. There is reason to believe that others have tried the like experiment without making public the fact; and it is certain that a considerable number of living birds of this species are annually received in London usually from Holland. Examples both alive and dead are frequently exposed for sale in the markets of Germany, Italy and France.

Throughout most parts of Europe the Little Owl is a well-known resident. It is abundant in France, Belgium and Holland, and thence northward to Denmark; but it has never been observed in Norway and has only once strayed to Sweden. In North Germany, according to Dr. Borggreve, it is far more common in the west than in the east. Herr Radde states that he obtained a specimen in Eastern Siberia, whence perhaps we may infer that the range of this bird extends across the Russian dominions; but its limits cannot at present be traced with any great precision, since to the east and south there occurs a very nearly allied, if indeed distinct, species, distinguished by several names (of which more presently) and many ornithologists, not recognizing the asserted differences between the two forms, leave that to which their observations refer a matter of doubt. However, examples of the Little Owl from Odessa, Sevastopol, Constantinople and Smyrna, seem to be admittedly identical with those from central and western Europe. In Greece, Italy and Spain the same is the case, and the bird is common, though the allied form may also occur in one or more of those countries and their islands, as it certainly does on the southern shore of the Mediterranean. More than this cannot now be said.

The present species was the emblematic bird of ancient Athens, and the attributed favourite of the Goddess of Wisdom, as the characteristic figures on sculptures and coins abundantly prove. It ought, therefore, to have been as well-known to all writers as a bird could be. It has, however, been unfortunate in its treatment by nomenclators. Having been inextricably confounded by many ornithologists with a perfectly distinct and much smaller European species, named *Strix passerina*[*] by Linnæus, who was apparently unacquainted with this larger bird, it has had a variety of names applied to it. In Prof. Sundevall's opinion it is the *Strix noctua* of Scopoli, though his account of that bird is meagre and inaccurate, but it is certainly not that described under the same name by Retzius, as many have thought. The *Noctua glaux* of Savigny properly refers to the allied southern form, subsequently called, by Vieillot, *S. persica*, by Risso, *N. meridionalis*, and, by the younger Le Vaillant, *S. numida*. The northern bird was named *S. nudipes* by Prof. Nilsson, but that epithet having been previously employed for another species, he subsequently changed it to *psilodactyla*. The generic term is also involved. *Noctua* and *Athene*, both the names most commonly used, have been preoccupied in Entomology. The type of *Glaucidium*, that which was next imposed, is said to be a species not congeneric with the present, and accordingly *Carine* remains to be used.

The beak is yellowish-white; the irides very pale straw-colour: the facial disk greyish-white, passing into brown on the outer side of each eye; chin, and sides of the neck, below the ears, nearly white; top of the head and neck clove-brown, with numerous spots of greyish-white; the back and wings clove-brown, with roundish white spots arranged in several lines on the scapulars and wing-coverts, and varied with other white spots partly concealed by the ends of the superincumbent feathers; primaries umber-brown, barred with yellow-brown or wood-brown: the first quill-feather short; the second and fifth longer, and equal in length; the third and fourth the longest, and also equal: tail above clove-brown, barred with pale wood-brown;

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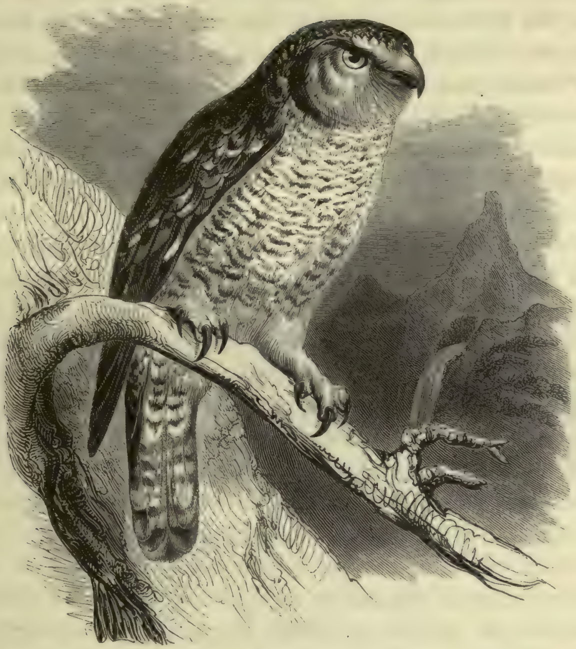
[*] This again has been confounded with the North-American *Nyctala acadica* (see above, page 157, note), and in consequence the latter has been erroneously said to inhabit also Europe, and the former the New World.

upper part of the breast with an indistinct brown and white transverse band, below greyish-white with longitudinal spots of clove-brown; under tail-coverts white; tail beneath dull greyish-brown, barred with yellow-brown: hair-like feathers covering the legs, and bristles of the toes, white; the claws black.

The whole length of this bird is about eight inches and a half. The females are rather larger than the males, and the general colour of their plumage is paler.

According to Bechstein, in the young birds before the first moult, "the head is of a soft reddish-grey, clouded with white. The large round spots on the back become gradually more marked; and the reddish-white of the under part by degrees acquires long streaks of brown on the breast and sides."



Surnia funerea (Linnæus*).

THE HAWK-OWL.

Surnia funerea.

Surnia, *Duméril*†.—Beak decurved from the base and much hidden by feathers; nostrils small and rounded; cere short; upper mandible slightly undulated; lower mandible notched. Facial disk nearly obsolete. Orifice of the ears small, without operculum. Wings short, first quill-feather equal to seventh, second longer than fifth, third and fourth longest and nearly equal. Tarsi rather short and, with the toes, thickly feathered. Tail long and graduated. Head flat and without tufts.

An Owl of this species, subsequently presented by Dr. Burkitt to the Museum of Trinity College, Dublin, was taken, in an exhausted state, on board a collier, a few miles off the coast of Cornwall, in March, 1830. On the arrival of the vessel at Waterford, whither she was bound, the bird was given to a friend of Dr. Burkitt, with whom it lived for a few weeks, and then came into his possession. Such was the account given by the late Mr. William Thompson when exhibiting the specimen at a meeting of the Zoological Society in 1835, and published in its 'Proceedings' for that year (page 77). Four other examples have since occurred. On a sunny afternoon in August, 1847, as recorded by Mr. E. T. Higgins (Zool. p. 3029), a bird of this species was shot near Yatton in Somersetshire while hawking for prey; and the specimen is now in Mr. Borrer's collection. Mr. Saxby has forwarded the information that one was killed at Scaa, in Unst, in the winter of 1860–61, and that its skin came into his possession. Mr. Robert Gray states that in December, 1863, he examined a very fine specimen which was shot at Maryhill near Glasgow, and exhibited at a meeting of the Natural History Society of that city, by Dr. Dewar in whose collection it now is. Mr. Gray adds that another example was taken in the flesh to a bird-stuffer at Greenock, in November, 1868, which was procured by Mr. William Boyd, and is supposed to have been killed at no great distance from that town.

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* *Strix funerea*, Linnæus, Syst. Nat. Ed. 12, i. p. 133 (1766).

† Zoologie Analytique, p. 54 (1806).

This species inhabits the pine forests of the more northern parts of both hemispheres, and in the Old World its range extends from Norway to the Amoor-country and Kamtchatka. The precise southern limits of its breeding-district do not seem to have been determined, but in Scandinavia they are believed to be not lower than 57° N. lat. Thence it wanders at times, and especially in winter, to Denmark, Belgium and Germany, having been obtained so far southward as Metz in Lorraine and Laxenburg in Austria. In America it is rarely seen so far south as Pennsylvania, and there only in severe winters. It does not inhabit either Iceland or Greenland.

The most recent account of the habits of this species has been supplied by travellers in the North of Europe. The late Mr. Wolley, in a letter to the Editor, (part of which was printed in the ‘Zoologist’ for 1854) says that this bird, which in some years is extremely abundant in Lapland, “flies much in the daytime, and, with its long tail, short, sharp wings and quick flight has a very Hawk-like appearance in the air, when its large square head is not seen. Its cry near its nest is also similar to a Hawk's; and it often sits on the bare top of an old dead fir, and has not the least fear of a gun. It carries itself much after the fashion of the more regular Owls; but whilst all the feathers at the back give a great breadth to its full face, there is quite a table at the top of its head. It casts its bright yellow eyes downwards with the true air of half-puzzled wisdom, or turns its head round for a leisurely gaze in another direction; to glance backwards is out of the question, and to look at anyone with a single eye is much beneath its dignity. From my window I have seen it fly down from its stand and take the mouse it caught back to the tree before it began to eat it; but it shifted its place several times before it found a convenient spot for finishing the meal. I do not know whether it is in the habit of also hunting on the wing, but this year mice are so abundant that such exertion would be superfluous. When disabled from flight, it at once squares itself for defence, putting on its most formidable countenance, guarding its back and presenting its front to the enemy. Calmly and silently it maintains its ground, or springs from a short distance on its foe. So bravely it dies, without a thought of glory and without a chance of fame, for of its kind there are no cowards.”

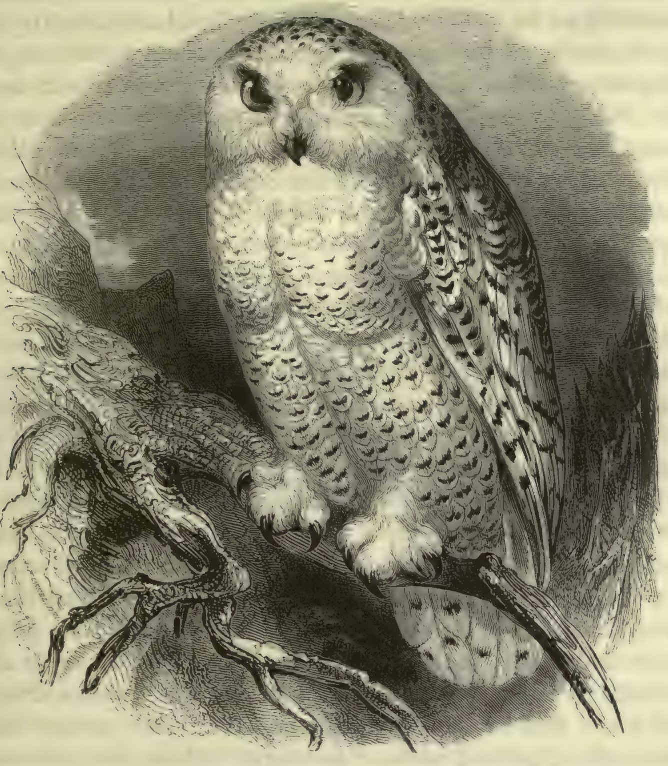
Subsequently the same excellent observer had numerous opportunities of becoming acquainted with the Hawk-Owl's mode of breeding, and found that early in the year it occupies a hole in a tree, or one of the nest-boxes set up by the people for the accommodation of Ducks, in which the hen-bird lays from five to eight white eggs, measuring from 1·63 to 1·43 by 1·26 to 1·13 in. The nest is boldly defended by its owners, and especially by the cock, who during incubation will fiercely attack and with his talons seriously wound any invader, often losing his life thereby. The late Mr. Wheelwright also bears testimony, so far as his much shorter experience goes, to the same general effect, adding that the Hawk-Owl will strike down the Siberian Jay while on the wing, and that he has more than once found it feeding on the Willow-Grouse; but smaller birds and mice of various kinds together with insects form its usual prey.

In the Fur-countries of North America Richardson says the Hawk-Owl is resident and abundant throughout the year, constantly attending the flocks of Ptarmigan on their spring migrations to the northward. "When the hunters," he adds, "are shooting Grouse, this bird is occasionally attracted by the report of a gun, and is often bold enough, on a bird being killed, to pounce down upon it, though it may be unable from its size to carry it off. It is also known to hover round the fires made by the natives at night."

A specimen killed in Lapland, and presented to the Zoological Society by Captain Everett, has the beak white; the irides straw-yellow; facial disk dull white, bounded on the sides by a semilunar dark purplish-brown patch extending from the ears downwards; head, back of the neck, and upper part of the shoulders, mottled with dusky black and dull white; back and wings dark umber-brown; lower part of the back barred with dull white; tertials elongated, loose, and downy, covering great part of the wing, and barred alternately with dusky brown and white; tail above dusky brown, with six or seven narrow bars and a broader terminal band of dull white. Chin dusky; throat and a band across the upper part of the breast dull white; breast, belly, and under tail-coverts, dull white, with numerous narrow bars of dusky brown; tail beneath barred alternately with greyish-brown and dull white; feathers of the tarsi and toes greyish-white; claws white at the base, tipped with bluish-black.

The whole length of the bird is about seventeen inches, the female being somewhat larger than the male.

This species has been much confounded by nomenclators with Tengmalm's and the Short-eared Owl.



NYCTEA SCANDIACA (Linnæus*).

THE SNOWY OWL.

Surnia nyctea†.

NYCTEA, *Stephens*‡.—Beak decurved from the base; nostrils large, oval; cere short; upper mandible smooth, lower mandible notched. Facial disk incomplete. Orifice of the ears moderate, without operculum. Wings of moderate size; the third quill-feather the longest, second and fourth nearly equal. Tail rounded and of moderate length. Legs and toes thickly covered with feathers. Head large, round, not furnished with tufts of feathers.

THIS beautiful species was first ascertained to occur in

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* *Strix scandiaca*, Linnæus, Syst. Nat. Ed. 12, i. p. 132 (1766).

† *Strix nyctea*, Linnæus (*loc. cit.*)

‡ General Zoology, xiii. part ii. p. 62 (1826).

Britain by the late Dr. Edmonston, who, early in the present century, as he informed Macgillivray, found one hung up as a scarecrow in the Shetland Islands.* He next saw one in the isle of Unst, which a few days afterwards he shot; and, in 1812, presented the skin to Bullock, with whom it remained until the disposal by sale, in 1819, of his collection. It was then bought for the British Museum, where it now is. Bullock himself, in July, 1812, saw a bird of this species, which he was unable to procure, in North Ronaldsey, one of the Orkneys, and heard of it in Westrey and elsewhere, and his account being communicated to Montagu, was by that naturalist published, in 1813, in the Appendix to his 'Ornithological Dictionary,' with the additional information that Bullock had about two years previously received a specimen from Norwich, in which neighbourhood, he was assured, it had been killed. It has since been shown by Thompson, in his 'Birds of Ireland,' that in the autumn of 1812 there is good reason to believe that a Snowy Owl was taken on the south coast of that island, and thus it would seem that the species was recognized as a visitor to all three kingdoms almost simultaneously. But at that time Montagu and others believed that the Snowy Owl bred on the islands of Unst and Yell, though Edmonston appears always to have doubted the story; and, since this species had received a Shetland name, "Katyogle," which has been also applied to the Short-eared Owl, a mistake seems at any rate possible. It is nowadays allowed on all sides that the Snowy Owl does not breed at liberty in any part of Britain, though it has occurred in every month of the year.

This species has been observed so frequently in the British Islands that an enumeration of the different instances is unnecessary. In some one or other of the Shetlands and Orkneys it appears almost every year, and, according to Mr. Saxby, usually after a northerly wind. On the mainland of

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* Macgillivray says this happened in 1808, but Edmonston, in his paper in the 'Memoirs of the Wernerian Society' (vol. iv. p. 157) says, "I fell in with this species first in Zetland in 1811, and in the following spring I shot an adult male, which I shortly after presented to Mr. Bullock."

Scotland it has been obtained once or oftener in most of the Highland counties and those bordering the Firth of Clyde. The same is the case in the islands of Mull, Iona and Skye; while in the Outer Hebrides it may be regarded, says Mr. Robert Gray, as an almost regular spring visitant. In England it has occurred at least thrice in Northumberland, once in Yorkshire, seven or eight times in Norfolk, once in Suffolk and once in Devonshire. In Ireland the recorded occurrences are not much less numerous, and beside the example before mentioned, which seems to have been noticed in the county Wexford in 1812, others have been observed in Cork, Tipperary, Longford, Mayo—where several specimens have been obtained, Donegal, Tyrone, Antrim, Armagh and Down.

The Snowy Owl is a truly Arctic bird, inhabiting the more northern parts of both hemispheres, not usually haunting the woodlands, as does the last species; but frequenting the open and mountainous districts. It has several times occurred in the Færoes; but visits Iceland and Spitsbergen only as a straggler, though observed by Mr. Gillett to be very common along the coast of Nova Zembla. It is a bird very well known to the Laplanders, and, regulating its movements by those of the lemmings, occasionally follows those destructive little rodents along the mountain ranges to lower latitudes, generally keeping, however, above the limit at which trees grow on the fells. It is thus often found to breed abundantly in a district wherein for many years before it had only been known as a straggler. The nest consists of a little moss or lichen and a few feathers, generally placed on a ledge of rock, where there is a slight hollow; but at times the eggs lie on the bare ground. They are from six to eight or even more in number, white, and measure from 2·44 to 2·1 in. by from 1·84 to 1·68 in. According to information supplied by a correspondent in Labrador to Mr. Hubert Hawkins (Ibis, 1870, p. 298) they "are not all laid and brooded at one time, but the first two are often hatched by the time the last is laid, so that you may find in one nest young birds and fresh eggs, and others more or less incubated." In Lapland Wolley several times met with people who had found nests of this species, and was told that the birds sometimes attack persons who approach their homes. He never succeeded in obtaining the eggs; but in 1843, Prof. Lilljeborg found a nest on the fells between Œsterdal and Gudbrandsdal in the middle of Norway; and in 1862 Wheelwright procured six eggs from a nest found by some Laplanders to the north of Quickjock in Sweden. Since then many have been obtained both from northern Lapland and from Labrador, and specimens may be seen in many collections. Richardson, whose long sojourn in the Fur countries of North America renders him an excellent authority, when describing the habits of the Snowy Owl says:—"It hunts in the day; and, indeed, unless it could do so, it would be unfit to pass the summer within the Arctic Circle. When seen on the barren grounds, it was generally squatting on the earth, and, if put up, it alighted again after a short flight; but was always so wary as to be approached with great difficulty. In the wooded districts it shows less caution; and, according to Hearne, has been known to watch the Grouse-shooters a whole day, for the purpose of sharing in the spoil. On such occasions, it perches on a high tree, and when a bird is shot, skims down and carries it off before the sportsman can get near it. It preys on lemmings, hares, and birds, particularly the Willow-grouse and Ptarmigan. Mr. Hutchins says that it eats carrion; and Wilson informs us that it is a dexterous fisher, grasping its finny prey with an instantaneous stroke of the foot as it sails along near the surface of the water, or sits on a stone in a shallow stream. I have seen it pursue the American hare on the wing, making repeated strokes at the animal with its foot."

In illustration of this last habit it may be stated that in Sweden the common name for the Snowy Owl is *Harfång* or "Hare-catcher;" and in corroboration of its propensity for carrion, as mentioned by Hutchins, reference may be made to the observation of Admiral von Wrangell, during his perilous expedition to the Polar Sea, that it "follows the

White Bear to feed on the remains of its prey." Notwithstanding this fact the flesh of the Snowy Owl, the bird being usually exceedingly fat, is held in high esteem as an article of food by the Laplanders, and, according to Mr. Reeks, by the settlers in Newfoundland. There is little doubt that the same taste was common to the ancient inhabitants of the South of France, since the bones of this bird, associated with those of the Rein-Deer and other northern animals, have been recognized by Prof. Alphonse Milne-Edwards among the kitchen-refuse found in caverns there, testifying thus to the existence of an Arctic climate at a former epoch in that now sunny region.

The weird appearance of this species, combined with the desolation of its haunts and the stories told of its attacks on passers-by render it an object of considerable dread among the less-educated Laplanders, and on one occasion a boy asked Wolley, if it could really be a bird. Wheelwright, writing of the species, says :—"Its shriek when on the wing resembles a loud 'krau-au,' repeated three or four times ; but it is seldom heard except when the bird is excited. Some of the movements of this bird are very extraordinary, and I once saw one fall from a considerable height on to the ground, where it lay for some time perfectly motionless, with outstretched wings, as if it were shot. I tried to come up within gunshot, but it rose out of distance, and sailed away uttering a wild loud cry, 'Rick, rick, rick,' as if mocking me." Other observers describe the note of this species as a low, whining wail.

To return to the localities visited by this bird in our own day. It has been met with in Denmark and is said to have occurred in Holland, and once in northern France. Further eastward it is less scarce, and according to Dr. Borggreve it visited Prussia and Pomerania in considerable numbers in the winters of 1858–59 and 1865–66. The same authority also states that it has occurred in Silesia and Upper Lusatia, while, on Herr von Pelzeln's shewing, it would seem to have once occurred in Lower Austria. As with so many other species its limits in Asia are not to be traced, but Mr.

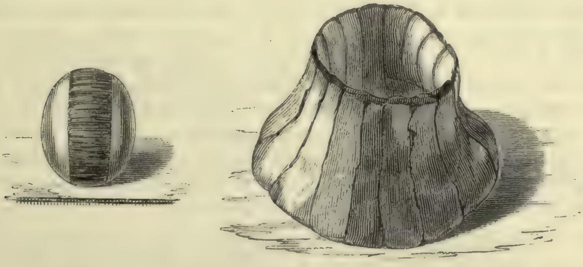
Hume (Ibis, 1871, p. 410) has lately received an example from Murdan in the Indus valley; thus proving its southern range in the Old World to be not much less extensive than it is known to be in America, where Mr. Dresser records it, on the late Dr. Heermann's authority, as having occurred at San Antonio in Texas (Ibis, 1865, p. 330). On the western coast of North America, however, its distribution is more limited, and though it occurs in Vancouver's Island and British Columbia, up to the present time Prof. Baird says it has not been recognized in California. In its migratory flights the Snowy Owl does not hesitate to betake itself to the broad ocean: it has more than once been observed in the Bermudas, and a very interesting account has been given by Thompson of a flock which accompanied a ship halfway across the Atlantic from the coast of Labrador to the North of Ireland. This happened in November, 1838, and it is worthy of remark that not many days after this event, the example, already mentioned as having occurred in Devonshire, was picked up dead at St. John's Lake, near Devonport. Its skin is now in the collection of Mr. W. S. Hore of that place.

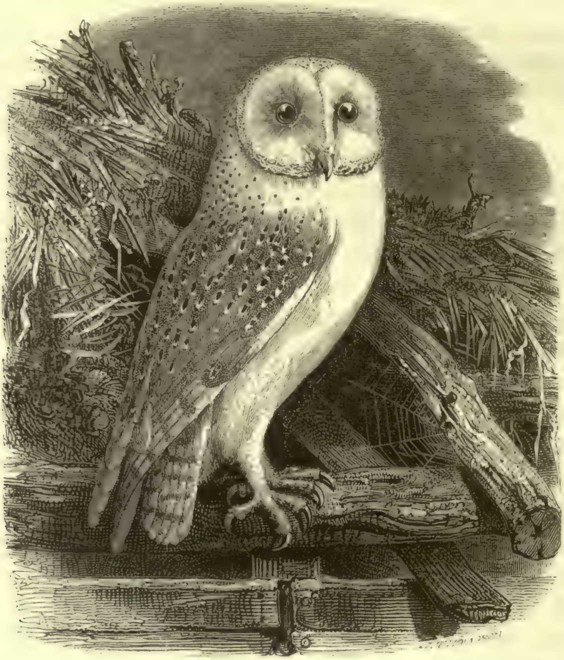
The Snowy Owl bears confinement well, and in the aviary of Mr. Edward Fountaine, whose unrivalled success in treating tame Owls has before been mentioned, the hen bird of a pair laid a single egg in the summer of 1870, and four eggs in that of 1871; but, though she sat on the latter, no young were hatched.

It was formerly supposed (as was also imagined to be the case with the Greenland Falcon) that the first feathers of the young Snowy Owl were dark in colour, and that the birds became whiter as they grew older. A specimen of a nestling in the British Museum negatives this supposition. The Owlet, it is true, is originally covered with down of a sooty-black colour, each tuft having a brownish-buff tip; but the first feathers assumed are indistinguishable from those which the adult wears, being of brilliant white with more or fewer black or very dark brown spots or bars. The birds, however, vary very much, and in some the plumage is almost free from dark markings. The variation, as in the case of the Greenland Falcon, seems to be purely individual, for specimens of either sex may be obtained representing its extreme limits, while examples kept in confinement exhibit no perceptible change consequent upon age. The dark marks when present are situated towards the end of the feather; and on the under surface are semilunar in shape, while those on the back and wings are more linear. The feathers forming the incomplete facial disk, those of the upper part of the breast, and also the downy feathers defending the legs and toes, are pure white; the beak and claws are black; both are partially hidden by feathers, and the latter long, curved and very sharp. The irides are bright orange-yellow. The whole length of the Snowy Owl is from twenty-two to twenty-seven inches, the difference depending on the sex: the females are much the larger of the two.

The vignette below represents the crystalline lens and the bony ring of the eye in this bird, which may be compared with those of the Eagle before figured (page 19).

Prof. Nilsson has incontestably shewn that the *Strix scandiaca* of Linnæus, though originally figured and described by error as a tufted Owl, was founded upon an example of this species, and the trivial name of his *S. nyctea*, which no one ever doubted to be the Snowy Owl, having been used for the genus by Stephens, it thus seems only proper to recur to the former as the distinctive appellation of this bird.





ALUCO FLAMMEUS (Linnæus[*]).

THE BARN-OWL.

Strix flammea.

ALUCO, *Fleming*[†].—Beak straight at the base, decurved only towards the point; cutting margin of the upper mandible nearly straight, under mandible notched. Nostrils oval, oblique. Facial disk large and complete, narrowing rapidly below the eyes towards the beak. Auditory opening square, large, and furnished with a large and nearly rectangular operculum, stiffened with the shafts of small feathers. Wings long and ample; the first and third quills equal and nearly as long as the second, which is the longest. Tail shortish. Legs long and slender, clothed with downy feathers to the origin of the toes, which are only furnished on the upper surface with a few bristle-like feathers; hind toe reversible; claws long, and grooved underneath, that of the middle toe serrated on the inner edge. Head smooth, not furnished with tufts.

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[*] *Strix flammea*, Linnæus, Syst. Nat. Ed. 12, i. p. 133 (1766).

[†] Philosophy of Zoology, ii. p. 236 (1822).

Naturalists, as has been already said (page 150), have hitherto generally considered our well-known Barn-Owl the type of the Linnæan genus *Strix;* but it has been shewn that Brisson, who first divided the group, applied that designation to the Tawny Owl, which he thus fixed as the generic type, at the same time describing the Barn-Owl under the appellation of *Aluco*, a term subsequently used by Fleming as the name of the very distinct genus to which this species belongs. Few authors indeed have followed the example so set, and it is not without serious consideration that the Editor here adopts what may be productive of some confusion; but the worst evils which beset scientific nomenclature being only avoidable by strict obedience to the rules which have been laid down for its governance, he feels bound to abide by them even in the present case. Still by whatever name the Barn-Owl may be called, it, with its allied species, as previously mentioned (page 149) forms a group possessing many characters not found in the other Owls, and the importance of this difference should not be overlooked whether the genus be termed *Aluco* or *Strix*.

Unlike the species last described, the Barn-Owl is resident in this country throughout the year, and is so peculiar in the colouring of its plumage, and so generally diffused, that it is probably the best known of all the British species of Owls. It inhabits churches, barns, old malt-kilns, or deserted ruins and also hollow trees. If unmolested, the same haunts are frequented, either by the same pair of birds or their offspring, for many years in succession. As destroyers of rats and mice, and that to a great extent, the services rendered by Barn-Owls to the agriculturist have obtained for this species at least toleration, while by some it is, as it deserves to be, strictly protected in return for benefits received.

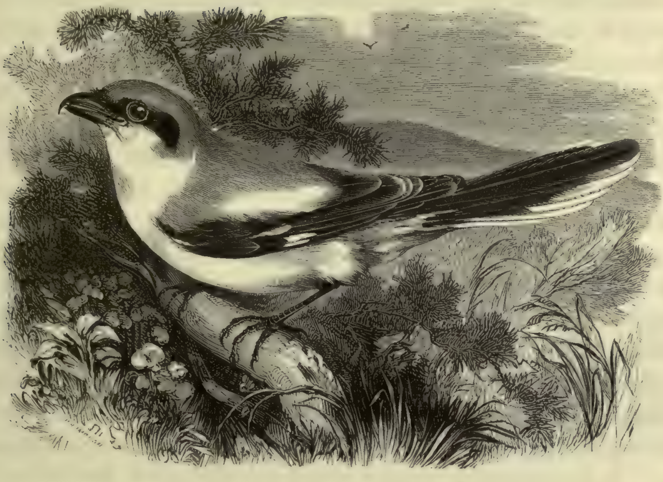
Unless disturbed, these birds seldom leave their retreat during the day, and if the place of concealment be approached with caution, and a view of the bird obtained, it will generally be observed to have its eyes closed, as if asleep. About sunset the pair of Owls, particularly when they have young, issue forth in quest of food, and may be observed flapping gently along, searching lanes, hedge-rows, orchards, and small enclosures near out-buildings. "In this irregular country," says White of Selborne, "we can stand on an eminence, and see them beat the fields over like a setting-dog, and often drop down in the grass or corn." They feed on rats, mice, shrews, small birds, and less commonly on insects, parts of all of which have been recognized at different times on examination of the rejected pellets, which are generally to be found in abundance near any favourite place of their resort. Waterton, in whom the Barn-Owl found an able and grateful advocate, truly observes that if this bird usually caught its food by day, instead of by night, mankind would have ocular demonstration of its utility in thinning the country of mice; but, though several times seen by him and others mousing in broad daylight under a cloudless summer's sky, to form a proper idea of the number it destroys we must have recourse to the means above stated. It has also been known to catch fishes which frequent shallow water, but this habit seems to be very exceptional. "When farmers complain," he continues (Mag. Nat. Hist. v. p. 13) "that the Barn-Owl destroys the eggs of their pigeons, they lay the saddle on the wrong horse. They ought to put it on the rat. Formerly I could get very few young pigeons till the rats were excluded effectually from the dovecot. Since that took place, it has produced a great abundance every year, though the Barn-Owls frequent it and are encouraged all around it." In further proof of which assertion he conclusively urges the indifference shewn by Pigeons towards Owls compared with their alarm at the sight of a Hawk.

The Barn-Owl commonly lays from two to six eggs, which are elongate and of a dull white, measuring from 1·78 to 1·53 by from 1·27 to 1·18 in. It breeds later in the year than most other Owls—seldom till towards the end of April. Waterton once found a half-fledged Owlet in the nest in December, but from May to July is the usual time for the young, which are at first covered with thick white down, to be hatched. Not unfrequently, as with some other Owls, a second or even a third laying takes place before the first family leaves the nest, so that Owlets of at least three different ages may be found in one nursery, while this continuous succession at times goes on for some months, it being probable that the warmth of the earlier birds materially aids the development of the unhatched chicks, during the nightly absence of the parents in quest of food, while their labour in supporting so large a family must be more easily borne by being spread over so long a period. The usual note of this species is a loud scream, often uttered while on the wing; the young in the nest make a snoring noise.

The Barn-Owl is common in all the counties of England; and, according to Thompson, is also the most common Owl in Ireland. In Scotland its distribution is less wide, for though common in the Lowlands and more southern parts of the Highlands, it becomes rare towards the north. In the Hebrides Mr. Gray has only been able to trace it in Mull and Islay. Low states that it bred in Hoy, but it has not recently been seen in the Orkneys, and there seems to be no record of its appearance in the Shetlands or further to the northward. It does not inhabit either Norway or Sweden, but a single example is said to have occurred once at Ystad in the extreme south of the latter. It is rare in Denmark, and its distribution is limited to the mainland and some only of the islands which form that kingdom. It is not found in Finland. In North Germany it is a well-known though not very common resident. Over the more temperate part of the European continent it is generally diffused, and its range extends eastward, as far at least as Mesopotamia, whence there is a specimen in the East India Museum, and southward to Quilimane on the east and to Angola on the west coast of Africa—the late Dr. Dickerson having obtained a specimen at the former and there being one from the latter in the Lisbon Museum. It was also found breeding in Madagascar by Mr. Edward Newton, and it occurs in the Atlantic islands—the Azores and Madeira. Whether it has not a further range in the Old World cannot at present be determined, for authorities do not agree as to the specific distinctness or identity of the Barn-Owls of China, India, the Cape Colony and other countries, which have been described as differing more or less from that of Europe. The Barn-Owls of the New World have been considered to form one or more separate species, but it is doubtful whether this view can be justifiably maintained, for no constant difference can be detected in a large series of specimens from the two worlds. As the American bird to which the name *Strix pratincola* has been assigned is said to be distributed from Long Island on the east and the Columbia River on the west coast, southward through Central America and some of the greater Antilles to South America generally, it follows that if it, and the other birds just referred to, be really identical with our Barn-Owl, this species must have a range little inferior to that of the Short-Eared Owl.

In an old male the beak is almost white; irides black; facial disk stained with rust-colour at the inner and lower part of each eye, the margin of the disk defined by the white feathers being tipped with brown; top of the head and the neck very pale buff, thinly spotted with black and white; back and wings darker buff speckled with grey, and spotted with black and white; upper surface of tail-feathers pale buff, with five transverse grey bars; all the under parts pure white; the toes dusky, the claws brown. The wings reach beyond the end of the tail, and the edges of the wing and tail-feathers have the appearance of being worn, the fibres forming the web being of unequal length, and the wings of these birds therefore, when moved in the air, make very little or no noise. In some specimens, generally found on dissection to be females or young males, the under surface of the body is fawn-colour. The whole length of the bird is about fourteen inches.

A good deal of local variation is observable in this species, and in particular Danish examples are very darkly coloured, having the facial disk of a rusty-red. Mr. Stevenson has recorded the occurrence in Norfolk of such a specimen, which was probably an accidental visitor to this country of foreign origin.



LANIUS EXCUBITOR, Linnæus[*].

THE GREAT GREY SHRIKE.

Lanius excubitor.

LANIUS, *Linnæus*[†].—Bill short, thick and straight at the base, compressed; upper mandible hooked at the point, with a prominent tooth; base of the bill beset with hairs directed forwards. Nostrils basal, lateral, oval. Wings of moderate size; the first quill-feather shorter than the second, the third the longest. Tarsus longer than the middle toe, which is united at its base to the outer toe.

THE GREAT GREY SHRIKE, the largest British species of the genus is a regular but not very common winter visitor to this country. On a few occasions it has been seen during summer; yet it has never been ascertained to breed here, —though it commonly does so in Holland, Belgium and northern France, and the large size of the nest and the variable colour and markings of the eggs of the Red-backed Shrike have in some instances led to the belief that they belonged to the Great Shrike.

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[*] Syst. Nat. Ed. 12, i. p. 135 (1766).

[†] *Tom. cit.* p, 134.

The Great Shrike feeds upon mice, shrews, small birds, frogs, lizards, and large insects. After having killed its prey, it fixes the body in a forked branch, or upon a sharp thorn, the more readily, as is supposed, to pull off small pieces from it. It is from this habit of killing and hanging up their meat, which is observed also in other Shrikes, that they have been generally called Butcher-birds. Part of a letter from Mr. Henry Doubleday of Epping, in reference to the Great Shrike, is as follows:—"An old bird of this species, taken near Norwich in October 1835, lived in my possession twelve months. It became very tame, and would readily take its food from my hands. When a bird was given it, it invariably broke the skull, and generally ate the head first. It sometimes held the bird in its claws, and pulled it to pieces in the manner of Hawks,—but seemed to prefer forcing part of it through the wires, then pulling at it. It always hung what it could not eat up on the sides of the cage. It would often eat three small birds in a day. In the spring it was very noisy, one of its notes a little resembling the cry of the Kestrel." Sheppard and Whitear state that Hoy having observed a Great Shrike frequenting a thick hedge near his house, found on examination three frogs and as many mice spitted on the thorns. As the bird was so shy as not to be approached within gunshot, he set six small steel traps, each baited with a mouse. On the following day two of the traps were sprung and the baits gone. Hiding himself and watching, he soon afterwards saw the Shrike dart down upon a bait and rise perpendicularly, but this time not quickly enough, as it was caught by two of its toes.

Mr. Blackwall has recorded of this species that a bird-catcher near Manchester, having arranged the cage containing his call-bird, and set limed twigs about it, a Great Shrike flew to the cage and was caught. Having placed it in a dark cage with the Redpolls he had previously taken, he was surprised and mortified, on reaching home, to find it had killed all its fellow-captives. A Shrike, as recorded in the 'Zoological Journal' (ii. p. 26), which was taken alive in a clap-net near London, in the act of striking at the call-bird, throve well in confinement, but was readily parted with by its possessor, who found that its note, once heard, stopped the song of all his other birds. It is said to have considerable power of voice, and sufficient flexibility to enable it to imitate the notes of some of the smaller birds, and thus attract them within its reach. Whether the last assertion be true or not, there is no doubt that the Shrike itself is ingeniously made use of by the Dutch falconers during autumn and winter when catching Passage Hawks. The whole manner of proceeding cannot be here described in detail,* for the apparatus used is complicated, but perhaps the following will suffice. The Shrike is tethered near a hut, wherein, half-buried in the ground, the falconer lies hidden, watching through a small hole his sentinel, which by its actions not only gives him notice of the approach of a Bird-of-prey, but also indicates to some extent of what kind the stranger is: thus, according to Prof. Schlegel, whose magnificent treatise on Falconry has been before mentioned in these pages, the Shrike is but slightly troubled at a passing Kite, Buzzard or Eagle, but beats itself on its perch with loud screams at the sight of a Harrier, while on the appearance of a Falcon or Sparrow-Hawk the vedette drops with cries of distress into a retreat which has been considerately provided for it.† On this the falconer, by pulling long strings, displays first one and then a second tethered Pigeon, previously concealed under sods of turf, and, the instant the Hawk clutches the last Pigeon, draws a bow-net over both, thus securing his prize.

Selby, writing from personal observation, states that the flight of the Great Shrike is "interrupted, being performed by jerks; and when perched, the tail is kept in constant motion." It frequents groves and forests, and builds on trees at some distance from the ground, making a nest of roots, bents, and moss, lined with wool and feathers, the latter appearing over the brim of the nest. The eggs are from four to seven in number, white tinged with green, or occasionally cream-colour, blotched irregularly with olive-green, wood-brown and dull lilac of various shades: the markings being sometimes suffused over the greater part of the shell, at others collected into a more or less distinct zone. The eggs measure from 1·17 to 1·01 by from ·83 to ·75 in.

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* There is a good account of it by Hoy (Mag. Nat. Hist. iv. p. 342).

† "The signs of alarm," adds the same excellent authority in a note (Traité de la Fauconnerie, p. 44), "which the Shrike gives, vary infinitely, not only according to the species of Bird-of-prey which appears, but also according to the mode by which it approaches—whether slowly or quickly, gliding over the ground or soaring aloft, and so on. It is impossible, without having observed them attentively, to have an idea of the astonishing instinct of these little beings, whose habits must be carefully studied before one is able to judge correctly the motives of all their movements."

The Great Grey Shrike has been obtained in most if not in all of the English counties, and in some very many times. It has also occurred in Wales, though the records of its appearance there are not numerous, probably from the scarcity of observers. In Ireland it has been several times obtained, chiefly, as appears from Thompson's statements, in the north. According to Mr. Robert Gray it is a regular winter-visitant to the eastern parts of Scotland, but less frequently towards the interior, while further to the west its occurrence, though not uncommon, is at uncertain intervals. No examples seem to be recorded from the Hebrides, but three are mentioned by Messrs. Baikie and Heddle as having been obtained in the Orkneys, where it appears to be an occasional winter-visitant, while in the Shetlands it has been once seen by Dr. Saxby (Zool. s.s. p. 2561). It does not seem to have been observed in the Færoes, but the Editor has been assured by Mr. John Pell, the well-known falconer, whose professional acquaintance with the Great Grey Shrike makes his testimony valuable, that in 1845 he saw a bird of this species in Iceland. It occurs over the whole of Scandinavia, breeding so far to the northward as lat. 71°, as it does in northern Russia; and it ranges across Asia, according to Herr Radde, to South-eastern Siberia. But here a second allied species may exist and possibly have been mistaken for it. Returning to Europe it breeds not uncommonly in northern and central Germany, Holland and Belgium, and is said to be found in northern France throughout the year. Being of essentially migrant habits it occurs in winter in southern Europe; but, as Messrs. Dresser and Sharpe have well shewn, in an able paper on this bird and its allies (Proc. Zool. Soc. 1870, p. 590), as well as in their 'Birds of Europe,' its eastern and southern limits must at present be considered undetermined, since two or three species so much resembling it as to have been often mistaken for it seem to replace it in the countries bordering the Mediterranean.

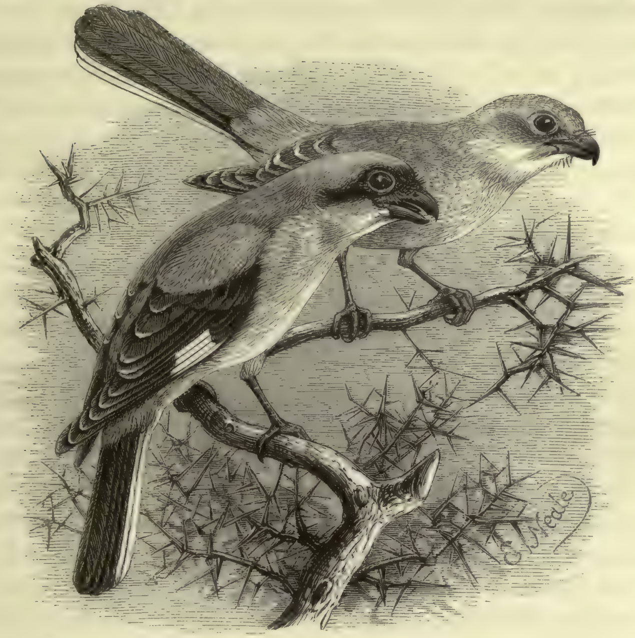
The ornithologists last named, who have done much to correct several errors made by writers of great repute with respect to *Lanius excubitor* and its kindred species, truly state that it may be recognized from all its congeners by the double white bar on the wing, caused by the basal half of the secondaries as well as of the primaries being of that colour. "This second bar," they continue, "is assumed gradually, and is more fully developed in adult birds, though traces of it can in most cases be discovered on a careful examination of the bases of the secondary quills." The non-appearance of this second white bar in certain specimens has induced a belief, or at least a suspicion, among some ornithologists in the occurrence in Great Britain of one of the North-American Grey Shrikes—the so-called *L. excubitoroides* of Swainson, now shewn by Messrs. Sharpe and Dresser to be identical with the well-known *L. ludovicianus;* but it seems probable that, most of the Grey Shrikes taken in this island being birds of the year, the second bar in these specimens is not much developed and may be easily overlooked. That such is the case may be gathered from Mr. Robert Gray's remark that nearly all the Scottish examples which have come under his notice, while possessing but one spot on the wing, have the under parts irregularly barred or minutely freckled—an unmistakable sign of youth in this species, though observable at all ages in the larger Grey Shrike of North America, *L. borealis*, and, according to Pallas, in another species described by him under the name of *L. major;* the existence of this last, which is said to come from Siberia, has however been doubted. To the east and south-east of the countries inhabited by *L. excubitor*, there occurs a smaller species, *L. lahtora*, at various times mistaken for our bird, which is again replaced to the south-west by two large forms, *L. algeriensis* and *L. meridionalis*, the first being a resident in North Africa, and the last a summer-visitor to the south of Europe.

In the old male, the bill is black, except the base of the lower mandible, which is yellowish-brown. The forehead and a line over each eye white; the lores, cheeks and ear-coverts black; all the upper plumage of the body, from the head to the rump, pearl-grey (the shade varying much in different examples), the scapulars, and often the tail-coverts, being tipped with white; wing-coverts black, those nearest the fore-arm greyish: quill-feathers of the wing black with a white bar at the base, forming, when the wing is closed, two white spots; the primaries are occasionally and the secondaries always also tipped with white. Two middle pairs of tail-feathers entirely black, the next pair black tipped with white, the succeeding pairs shewing more white, until the outermost are almost wholly so. Beneath, the markings of the tail, which is much graduated, are fully defined but less pure in colour, and the inside of the wings is pure white, the remiges only being grey beneath. Irides very dark brown; legs, toes and claws, black.

Females resemble the males, except that the colours of the plumage are not so pure, and the dull white of the breast is marked with numerous greyish semilunar lines.

Young birds of both sexes are much duller in colour, and often have, as already mentioned, the double white spot on the wing feebly developed.

The whole length of the Great Shrike is ten inches. Wing from the carpus to the end of the longest primary, four inches and three-quarters; first wing-feather only half as long as the second; the second shorter than the third, fourth, or fifth, which are nearly equal, and the longest in the wing; the sixth but very little longer than the second.



Lanius minor, J. F. Gmelin*.

THE LESSER GREY SHRIKE.

The Lesser Grey Shrike, being a bird of migratory habits, considerable power of flight and wide distribution on the continent of Europe, is just one of those species, whose occasional appearance in our islands might have been safely foretold. Its general resemblance also to the Shrike last described (though their distinctive characters, when once pointed out, are plain enough) is such that each may easily be mistaken for the other—and, as will be immediately seen, this has been done in one instance. Early in November, 1851, Mr. Edward Hearle Rodd, who for many years has unceasingly recorded his observations on birds in Cornwall, received a female grey Shrike, which had been killed a few days before on St. Mary's, one of the isles of Scilly. The occurrence of this bird he noticed in the 'Zoologist' for the same year (p. 3300) under the name of *Lanius excubitor;* though, as he has kindly informed the Editor, he soon after remarked the differences between this example and an adult male of the Great Grey Shrike, in his already rich collection. In the same periodical for 1867 (p. 556) Mr. J. H. Jenkinson gave a description of this and other specimens of grey Shrikes, announcing that it was pretty certain it could not be *L. excubitor*, but not referring it to any known species. Subsequently the same gentleman (*tom. cit.* p. 606) suggested that it might belong to the American *L. ludovicianus* of Linnæus, and soon afterwards its owner, Mr. Rodd, sent the specimen to Mr. Gould, by whom it was identified as the European *L. minor*, and figured in his 'Birds of Great Britain.' Since that time Mr. Murray A. Mathew has received, from Great Yarmouth, in Norfolk, a specimen obtained in a garden there in the spring of 1869 (Zool. s.s. p. 2060), the genuineness of which has been corroborated (*tom. cit.* p. 2139) by Mr. Stevenson; and thus, two individuals of this species having unquestionably occurred in England, its introduction in the present work may be fully expected.

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* Syst. Nat. i p. 308 (1788).

On the continent of Europe the Lesser Grey Shrike is a summer immigrant, arriving early in spring and departing late in autumn. It is of rare occurrence in Holland, and has been obtained only once in Denmark. In the south of Sweden it has been observed two or three times, and a single example has been met with in Finland; but south of the Baltic it is not uncommonly found, breeding throughout northern Germany from Pomerania to Luxemburg. It also visits Russia and probably extends its range into Siberia, for Ménétries obtained it in Caucasia. De Filippi observed it in Persia and Canon Tristram in Palestine, where, however, it seems to be rare, though Dr. Krüper found it breeding in Asia Minor. Turning westward, it occurs in all the countries of central and southern Europe, as far as Spain, but appears not to be common in that kingdom, nor to have been hitherto observed in Portugal. In Africa it ranges from north-east to south-west, frequenting, as Dr. von Heuglin states, if not residing on, the shores of the Red Sea, while, according to Messrs. Dresser and Sharpe, many specimens were sent by Andersson from Damaraland.

In habits this species is said to resemble the Great Grey Shrike, but it preys less on mammals and birds, feeding chiefly on insects and at times on fruit, such as cherries, figs and mulberries. In Provence, where it is common, it frequents the marshy plains bordering the sea or intersected by water-courses. In North Germany a pair or two are said to haunt the orchards of most of the villages, though it is also found on the verge of the forests. Its flight, according to Vieillot, is straight and sustained. It rests often on the ground, either on a stone or a hillock, and when disturbed thence betakes itself to the woods. It builds a large and thick nest, in which green clover-stems are, according to several observers, always to be found, mixed with a few dry sticks, wool and field-flowers—mostly, it is said, those having an aromatic odour, and lined with feathers. The eggs are from five to seven in number, white, tinged with apple-green occasionally inclining to olive, and marked with large blotches, usually ill-defined but sometimes bold, of olive and ash-colour. In a few instances the eggs have been known to have the reddish tints so frequently found in those of the Red-backed Shrike. They measure from 1·05 to ·93 by from ·73 to ·68 in., and are usually laid at the end of May or beginning of June. This Shrike bears no other bird in its neighbourhood, and Crows especially it is said to chase away from its nest with angry cries.

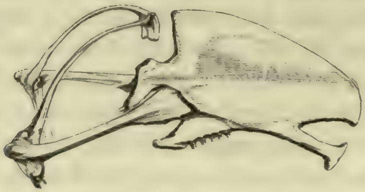
In the adult male, as represented by the lower figure of the woodcut, the bill, which is very stout in proportion to the size of the bird, is dark horn-colour, almost black; across the forehead a broad black band passes backward both above and below the eyes, and forms a patch extending behind the ears. All the plumage of the body above, from the head to the rump, is of an ashy-grey, somewhat lighter at either extremity. Wing-coverts brownish-black, those in the fore-arm inclining to grey. Primaries and secondaries brownish-black, the former with a broad white band and some of the latter tipped more or less with white. Two middle pairs of tail-feathers black, the next pair white at the base and tip, the next with still more white, and the outermost, which are considerably shorter than the rest, entirely white. The plumage beneath is white, quite pure on the chin, throat and sides of the neck; but suffused with a roseate blush, often fading into grey, on the breast and sides of the body; the lower wing-coverts blackish-grey; the quills of the wings and tail beneath shew the markings of the upper surface but less distinctly. The legs, toes and claws, dull black.

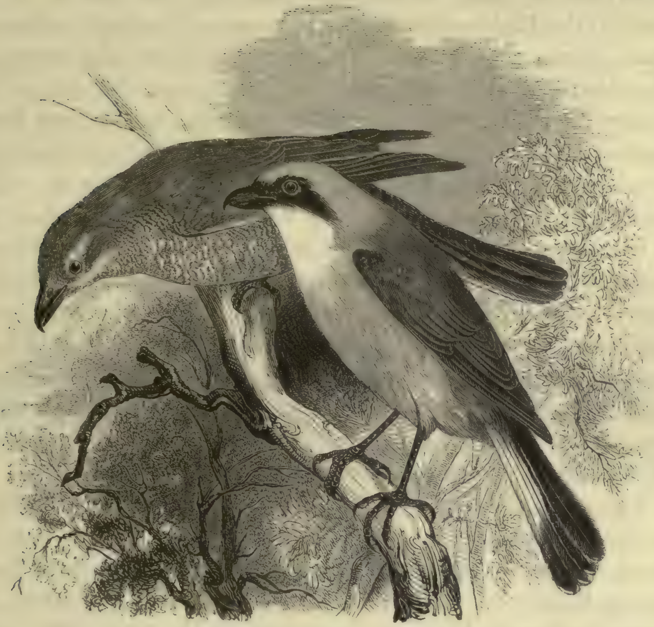
The female and immature male have the black frontal band mixed with brown, the colours generally less pure, and the breast and belly marked with light grey transverse lines.

The young, as also represented in the woodcut, has the upper surface of the body mottled with darker bars, generally two near the tip of each feather, the terminal patches of the wing-feathers being also tinged with pale brown.

The whole length of the Lesser Grey Shrike is from eight to nine inches, from the carpus to the end of the longest primary, four inches and a half; the first wing-feather not so long by a third as the second, which is slightly longer than the fourth, but usually shorter than the third—the longest in the wing.

The vignette below represents the breastbone of the Great Grey Shrike, and shews the form which, with comparatively few exceptions, is common to the whole of the Order *Passeres.*





Lanius collurio, Linnæus*.

THE RED-BACKED SHRIKE.

Lanius collurio.

The lower figure of the engraving represents the male, and the upper figure the ordinary appearance of the female, of the Red-backed Shrike, a well-known and regular, though somewhat local, summer-visitor to this country. It arrives in Italy from Africa about the beginning of April, and reaches England by the end of that month or early in May, leaving again in September. It frequents the sides of woods and high hedge-rows, generally in pairs, and may frequently be seen perched on the uppermost branch of an isolated bush on the look-out for prey. The males have a chirping note, not unlike that of the Sparrow, which is uttered sufficiently often to form a sort of song; and several observers say they imitate the voice of other birds. The food of the Red-backed Shrike is mice and probably shrews, small birds, and various insects, particularly the common May-chaffer. Its inclination to attack and its power of destroying little birds has been doubted; but it has been seen to kill a bird as large as a Finch, is not unfrequently caught in bird-catchers' clap-nets, having struck at the call-birds, and is recorded as having been seen in eager chase of a Blackbird by Sheppard and Whitear. The same writers mention their having found the bill of a Red-backed Shrike coated over with cowdung, doubtless from its having been searching therein for insects. Mr. Hewitson says, that seeing a male of this species busy in a hedge, he found, upon approaching it, a small bird, upon which it had been operating, firmly fixed upon a blunt thorn; its head was torn off, and the body entirely plucked.

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* Syst. Nat. Ed. 12, i. p. 136 (1766).

The nest made by this species is very large in proportion to the size of the bird, frequently measuring from six to seven inches diameter; it is usually placed rather high in a strong hedge or thick bush, and is generally formed of coarse stalks of plants on the outside, with some moss and fibrous roots within, and lined with bents and a few hairs. The eggs are four or five in number, measuring from ·95 to ·82 by from ·68 to ·62 in., and very variable in colour, sometimes of a yellowish-, or occasionally pale olive-white, with markings of wood-brown, olive or lilac, generally well-defined, and often in distinct spots, but not unfrequently in diffused blotches, while again other eggs have a salmon-coloured ground with markings of light red of two shades and lilac, the markings in both varieties frequently forming a band or zone. The eggs have been exceedingly well represented in all the editions of Mr. Hewitson's work.

The Red-backed Shrike breeds more or less commonly in all the counties of England and Wales, becoming scarcer to the extreme west and north. It has not been observed in any part of Ireland, and has only of late years been recorded from Scotland, though noticed there, according to Mr. Robert

Gray, so long ago as 1817, when a pair were shot near Hawick. Mr. Arbuthnot in 1833, seems, however, to have been the first to publish the fact of the occurrence of this species in the northern kingdom; since which time Mr. Sinclair, Prof. Duns, Dr. Gordon, Lord Haddington and Mr. Harvie Brown have recorded similar observations, shewing that, during the season of its migration, it is an occasional visitor to the eastern parts of Scotland, while in a few instances it has been seen in pairs and may possibly have bred there. Indeed there is reason to infer that it has done so even in the Shetlands; for Dr. Saxby, who in 1866 shot an example in Unst, early in June, 1870, observed in the same island a female of this species accompanied by three young birds, one of which frequented a garden there for nearly three weeks. This Shrike occurs in summer throughout the continent of Europe excepting the Iberian peninsula, ranging as high as lat. 64° N., and is found in the temperate parts of Siberia. De Filippi observed it everywhere in Persia, and thence it may be traced across Palestine to Africa, where, though not hitherto found to the northward of the Great Desert or of Angola on the west coast, it is very widely distributed, for ascending the valley of the Nile it occurs on both sides of the southern part of that continent as far as the confines of the Cape Colony, and, curiously enough, breeds there.

The adult male has the beak black, the feathers of the forehead and lore, around the eye, and those forming the ear-coverts, black; the irides hazel-brown; all the upper part of the head and the neck grey; back and wing-coverts fine chestnut-red; upper tail-coverts grey, tinged with red; primaries dusky black, edged with red on the outer web; secondaries and tertials the same, but with broader red margins; tail-feathers with the proximal half white, the distal half black, just tipped with white; the shafts black; the two middle tail-feathers, which are longest, are wholly black except the tips, which are white; the outer tail-feather on each side about three-eighths of an inch shorter than the others. The chin is nearly white; all the under surface of the body very pale red; under tail-coverts white; legs, toes and claws, black. The length of the adult male is about seven inches and a half; the wing from the carpal joint to the end of the third and longest feather, three inches and seven-eighths; the first feather less than half the length of the second which is nearly as long as the fourth.

The adult female ordinarily has the beak dark brown; irides hazel: no black about the head, but a light-coloured streak over the eye; the whole of the upper surface of the head and body reddish-brown; wings like those of the male, but the rufous margins narrower; tail-feathers above brown, tinged with red, the outer edge of the web of each outside tail-feather dull white; below grey, tipped with dull white. Chin dull white: under surface of the body and the sides greyish-white, crossed with greyish-brown semilunar lines; abdomen and under tail-coverts, dull white. The length of the female described rather exceeded that of the male. Young males are like adult females, but have the darker semilunar marks on the back as well as on the breast.

Some particulars in reference to the female of this species require here to be noticed. Though the description just given is that of its ordinary appearance, it has been observed by various ornithologists and in different countries that occasionally a hen Red-backed Shrike is found very, if not exactly, similar in plumage to that worn by the cock. In England the fact seems to have been first noticed by Hoy, who, in 1831, recorded (Mag. Nat. Hist. iv. p. 344) his having found a nest of this species attended by two apparently male birds. Struck by the singularity of the fact he shot both, and "on dissection one proved the female, with the eggs much enlarged, and one nearly ready for exclusion." In 1835, Mr. Blyth met with an almost similar example: "it was," he says (Mag. Nat. Hist. viii. p. 364), "a female, partly in the male plumage; but the ovaries were perfect, and contained eggs; and it was in company with a partner of the other sex at the time it was shot." "I have reason to believe," he continues, "that this was a young individual; that is to say, a bird of the preceding year." Now these cases, and others which might be cited, will be seen to bear no real analogy to the numerously-observed instances of the assumption of the male plumage by the females of many gallinaceous birds, in which it is accompanied if not induced by a peculiar condition of the ovaries, while in the former those organs are in full vigour. Some writers have assumed that it is only the very old hen of this Shrike which acquires the cock's plumage, but Mr. Blyth's statement as to the age of the example he describes shews that the fact is not to be thus explained. In the absence of any mode of accounting for the curious fact, it may be here suggested that this is perhaps a case of what has become of late known to zoologists under the name of "sexual dimorphism," and has now been frequently observed in many groups of animals.

Knowing that the adult females of the Grey Shrikes and that of the Woodchat, next to be described, closely resemble their respective males, while (setting aside the exceptional cases just cited) the hen Red-backed Shrike without doubt most generally differs greatly from the cock, it is worth considering whether any laws which govern the assumption by birds of peculiar styles of plumage according to their several ages and sexes can be discovered. Cuvier long ago made two assertions on this subject (Règne Animal. Paris: 1817, i. p. 296), which were no doubt true so far as his experience went, and they have been dignified by the name of "laws." These are: first, that when, as is most often the case, the female differs from the male by its less lively colours, the young of both sexes resemble her; and secondly, that when the adult males and females are of the same colour, the young have a livery peculiar to themselves. To these two a third "law" has been added in former editions of the present work: namely, that whenever adult birds assume a plumage during the breeding season decidedly different in colour from that which they bear in the winter, the young birds of the year have a plumage intermediate in the general tone of its colour compared with the two periodical states of the parent birds, and bearing also indications of the colours to be afterwards attained at either period.

It will now however be within the knowledge of most ornithologists that these so-called "laws" are subject to numerous exceptions, while they by no means include all the different cases which an extended acquaintance with the feathered creation will shew. The first of them when taken according to the precise terms in which it was enunciated seems to have the most force, but cases occur, as in some of the Woodpeckers, where the young have a plumage peculiar to themselves even when that of their parents differ sexually; and we ought also to take up the converse of the proposition, where we find that in the rare cases in which the female possesses more lively colours than the male, the young of both sexes resemble him. To the second of these "laws" exceptions are more plentiful even among common British birds; for in many of the Crows and in the Kingfisher, where the sexual differences of the adults are exceedingly slight, the young have no plumage that can be called peculiar to themselves. Nor are cases far to seek in which the third "law" will not apply; for in the Razor-bill and the Common Guillemot, where the breeding plumage of both sexes is alike and yet decidedly different from that which they wear in winter, the first plumage of the young resembles the wedding garments of their parents without possessing anything of an intermediate character between the two periodical states. Again there are instances in which both adults and young differ according to sex, thus the male Blackbird can be distinguished from the female even as a nestling. All these cases have been very fully considered by Mr. Darwin in his latest work, and, quite irrespective of any arguments that may be founded upon them, the chapter in which they are treated deserves the closest attention of ornithologists.*

Into the question of the various modes by which changes in the appearance of the plumage of birds are produced it is not proposed at present to enter.

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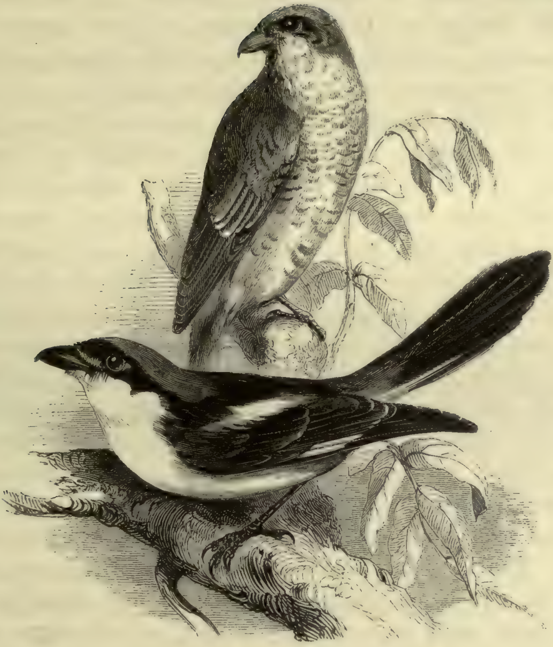
* 'The Descent of Man, and Selection in relation to Sex.' London: 1871, vol. ii. chap. xvi. pp. 187–223.



LANIUS AURICULATUS, P. L. S. Müller*.

THE WOODCHAT.

Lanius rutilus†.

WHATEVER doubts might have existed formerly of the propriety of including the Woodchat among the Shrikes that visit England, there can be no question on this subject now, and it is thought that the species may have even bred in this country.

One of the earliest specimens recorded as British is that noticed by Gilbert White in his letter to Pennant, dated Selborne, August 30th, 1769, wherein the writer says that a fine specimen had lately been sent to him, though he does not mention where it had been procured. From the fact that Ray applied to his description of this species the English name by which it is now generally known, it would seem as if he meant it to be regarded as British.

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* Natursystem, Supplem. p. 71 (1776).

† Latham, Ind. Orn. i. p. 70 (1790).

In the British Museum there is a specimen of the Woodchat, a young male, which formerly belonged to Leach's collection, and is labelled as having been killed in Kent. Since that time the occurrence in England of more than twenty examples has been noticed—chiefly in the southern and eastern counties. Several have been taken in the Scilly Isles, and one near Plymouth. Mr. More says (Zool. p. 6851) that he was informed it had bred twice at Freshwater in the Isle of Wight, and, although the parents were carefully respected, one of the nests, with the eggs, as well as a young bird shot in September, 1856, are in the collection of Mr. Bond, who has kindly confirmed the statement. The same gentleman informed Mr. Gould that Mr. Braikenridge has a nest and eggs also received through the same source. The bird has been obtained near Brighton and a second time in Kent, while some four or five examples are said to have been procured in Suffolk, and about as many in Norfolk, though the assertion of Hunt that it had bred in the county last named very likely originated in error. Further inland it is stated to have been met with in Surrey, Hertfordshire, Nottinghamshire, Derbyshire, Worcestershire, and Yorkshire. Mr. R. Gray remarks that it is included in Don's list of the birds of Forfarshire, but it seems not to have been noticed in Scotland by any other observer, and never in Ireland. Most of the examples taken in England have occurred during the seasons of migration, and the majority of them seem to have been in immature plumage.

In size, in most of its habits, and in its mode of feeding, the Woodchat resembles the common Red-backed Shrike, and, like that species, is said to imitate the voice of several different birds. Hoy has well remarked (Mag. Nat. Hist. iv. p. 343) that it differs, however, from *Lanius collurio* "in the choice of situation for its nest, placing it invariably on trees, and preferring the oak. The nest is placed in the fork of a projecting branch, composed on the outside with sticks and wool, mixed with white moss from the bodies of the trees, and lined with fine grass and wool." In the Netherlands, to which country these observations refer, he continues, it is not a wild bird, often building close to houses and public roads, and arrives and departs about the same time as the Red-backed Shrike. Writing of this species in Algeria, Mr. Salvin says (Ibis, 1859, p. 312) that it "breeds in great numbers on the hill-sides in the neighbourhood of Djendeli, making a nest composed almost entirely of one material, viz. a small grey flower, which the bird collects with the stalk, and entwines into its nest, employing the same for the lining. The whole structure is beautifully neat and compact." Other writers have noticed that the Woodchat, like the Lesser Grey Shrike, as already mentioned, makes choice of odoriferous plants in the construction of its nest. The eggs are four or five in number, and very variable; some being white tinged with green or pale olive blotched irregularly with olive and lilac of different shades, the markings sometimes diffused and sometimes forming regular spots often disposed in a zone, while other specimens are of a cream-colour with light red and suffused lilac spots. They measure from ·97 to ·86 by from ·7 to ·65 in.

This Shrike does not visit the most northern parts of the European continent; but is found in nearly all the countries lying between the Mediterranean and the Baltic. In Denmark, however, it seems to occur only occasionally. In North Germany it is more abundant, but becomes less common, according to Dr. Borggreve, to the eastward. There appears to be no trace of it in Russia, except in the extreme south—the provinces bordering the Caspian and Black Seas. It inhabits both European and Asiatic Turkey, and was observed by De Filippi in Persia, reaching that country probably from Palestine or Arabia, in both of which it is found. On the eastern side of Africa its range extends, according to Dr. von Heuglin, southward as far as lat. 5° N., and on the western it is abundant in the Gambia, and has been received by Dr. Hartlaub from the Gold Coast. Excepting perhaps within the tropics, where it may be stationary, it is a migratory species throughout all the countries in which it is found, appearing in southern and central Europe in spring and leaving in autumn.

In the adult male, as represented in the lower figure, the beak is black, above the base of the upper mandible is a narrow streak of white; the forehead, round the eyes, the ear-coverts, and a small patch depending therefrom, black; irides hazel; crown of the head and nape of the neck, rich chestnut-red; the back black; the scapulars white; the rump grey; upper tail-coverts white: the wings and wing-coverts black; the primaries white at the base, forming a spot when the wing is closed; the secondaries white at the end: the middle tail-feathers black; the outer feather on each side wholly white; the next on each side with the proximal half white, the distal half black, with a white tip; the next on each side with a white tip only. The chin, throat, breast, belly, and under tail-coverts, white; legs, toes, and claws, black.

The whole length of the male here described was seven inches and a half. The length from the carpal joint to the end of the wing-feathers, four inches: the first wing-feather less than half the length of the second; the third, fourth, and fifth, longer than the second; the third the longest of the whole.

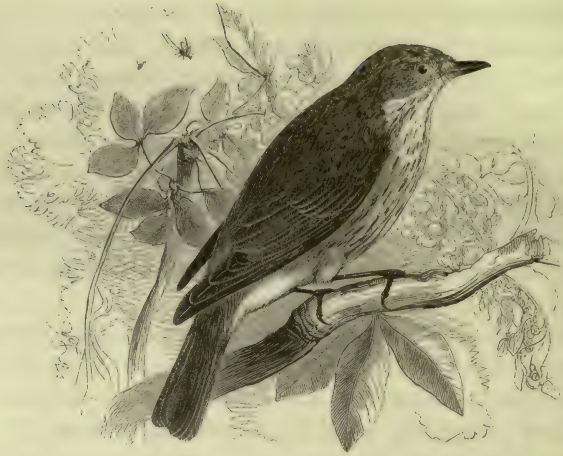
The female has the crown and nape dull red; the scapulars dirty white; the black of the back mixed with brown; the wing-coverts edged with red; the breast dirty white; the feathers of the flanks reddish tipped with brown.

The young bird of the year, as represented in the upper figure, is reddish-brown above, with brown transverse lines; wings and tail brownish-black; underneath dirty white, with greyish transverse lines.

The young male in the British collection of birds in the British Museum, which has been already mentioned as having been killed in Kent, and a specimen of a young female formerly in the Museum of the Zoological Society, which bird belonged to the collection of Mr. Vigors; both these are apparently in the plumage of the second or third year, and may be thus described: Head, and nape of the neck, red; back and wings hair-brown, without any transverse lines; scapulars and edges of the tertials yellowish-white; rump inclining to grey; tail-feathers clove-brown; all the under surface of the body dull white, tinged with red, but without bars; beak, legs, and toes, dark brown.

Examples of the Woodchat from Egypt in winter-plumage present very great variety, and have been the cause of many errors.

Several of the smaller Shrikes, of which this species is one, are by some authorities removed from the genus *Lanius*, and for their accommodation a genus *Enneoctonus* has been erected—a proceeding which seems scarcely necessary.



MUSCICAPA GRISOLA, Linnæus[*].

THE SPOTTED FLYCATCHER.

Muscicapa grisola.

MUSCICAPA, *Linnæus*[†].—Bill of moderate length, broad and depressed at the base; compressed and slightly curved towards the point. Nostrils basal, lateral, and partly concealed by the frontal plumes. Gape beset with bristles. Feet small, the tarsus about the same length as the middle toe, which is much longer than the lateral toes. Wings long and pointed, the first primary very short, the second rather shorter than the third, fourth, and fifth, which are the longest in the wing.

THE SPOTTED FLYCATCHER is one of the latest, but, at the same time, one of the most regular of our summer-visitors. White of Selborne remarks, even more than once, in his miscellaneous observations published in Jesse's 'Gleanings,' that it arrives on the 20th of May. Selby says, this bird seldom makes its appearance till the oak-leaf is partly expanded, but begins its nest almost immediately on its arrival.

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[*] Syst. Nat. Ed. 12, i. p. 328 (1866).

[†] *Tom. cit.* p. 324.

It frequents woods, orchards, gardens and lawns, and is not a little remarkable for the singularity of the places in which it sometimes makes its nest. There is also very good reason for believing that the same pair of birds return to occupy the same spot for several years in succession.

The more usual places for this bird's nest are, the smaller twigs which grow from the bole of a large tree, the side of a faggot-stack, a hole in a wall, or on a beam in an outbuilding, whence arises one of its provincial names, that of Beam-bird; it also frequently fixes its nest on a branch of a pear-tree, a vine, or a honeysuckle, when trained against a building. Of three cup-shaped nests now before me, one is formed on the outside of old dark-coloured moss, mixed with roots, the lining of grass stems, with only two or three white feathers; the second has the bottom and outside of fresh green moss, lined with a few grass bents, long horse-hairs, and several mottled feathers; the third is similar to the last on the outside, but lined with long horse-hairs, wool, and feathers. The labour and art bestowed by birds on the construction of their nests have long been the theme of admiration; but the state of vegetation at the nest-building season of the year, and the care manifested by birds generally in selecting a place of security, render it difficult, excepting under very favourable circumstances, to obtain a sight of the nest-makers when at work. From what has been observed, however, it is believed that the female is generally the nest-builder; the male collects and brings to her the materials required: long stems of grass, or long horse-hairs, are interwoven by the bird fixing in one end, and then traversing the edge of the nest, laying in the remainder as she makes circle after circle. The eggs of the Spotted Flycatcher are four or five in number, measuring from ·83 to ·66 by from ·6 to ·51 in.; the ground-colour varying from french white to pale greenish-blue, or being occasionally of a cream-colour blotched and speckled with rusty, sometimes of a very deep hue, or less frequently closely mottled with minute streaks of pale rusty so as almost to hide the ground-colour. White says, the female while sitting on the eggs is fed by the male even as late as nine o'clock at night. This bird has no power of voice beyond a harsh call-note.

A curious fact in reference to this bird was noticed by the late Mr. Thomas Andrew Knight. A Flycatcher built in his stove for several successive years. He observed that the bird quitted its eggs whenever the thermometer in the house was above 72° Fahr., and resumed her place upon the nest again when the thermometer sunk below. The young are hatched about the second week in June: when able to leave the nest, they follow the parent birds, who feed them until they can catch insects for themselves. When on the look-out for food, they generally take their stand on the top of a post, on the upper bar of a flight of rails, or the extreme end of a branch of a tree, whence they dart off on the approach of an insect, appear to catch it with ease by a short and rapid movement, returning frequently to the spot they had quitted, to keep watch as before. These birds feed exclusively on winged insects, though they have been accused of eating cherries and raspberries; and in this belief the species in some parts of Kent goes by the name of the Cherry-sucker, but they visit fruit-trees for the sake of the flies which the ripening produce attracts, since on examination of the stomachs of Flycatchers killed under such circumstances no remains of fruit were found.

White says that the Spotted Flycatcher only rears one brood in this country; but many instances of this bird's producing a second hatch are known. Mr. Knox indeed has recorded such an event for three successive seasons.

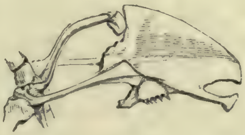
The Spotted Flycatcher is common during summer in all the counties of Great Britain, though less frequent in Scotland; and Thompson says that it is also a regular summer-visitor to some parts of Ireland, and perhaps to suitable spots throughout the island; but it would seem to be very local and sparingly distributed even in the counties in which it occurs, as Cork, Kilkenny, Tipperary, Clare, Dublin, with those of the north-east part of Ulster. It is a common bird throughout the European continent, its range extending to lat. 69° N., at which elevation it is far from scarce. Its eastern limits cannot at present be determined, but it is found in Russia, being exceedingly numerous in the south, and De Filippi met with it in Persia. Canon Tristram speaks of it as arriving in Palestine on the 23rd of April and the two following days in great numbers, and remaining to breed there. It also occurs in Arabia, and in Africa southward to the confines of the Cape Colony; but it does not seem to have been observed in any of the Atlantic Islands.

The beak is dark brown; the irides hazel; the head and the whole of the upper surface of the body and wing-coverts hair-brown, the wing- and tail-quills being a little darker, with a few dark brown spots on the top of the head; the tertials with a narrow margin of light brown; the lower parts dull white, with a patch of light brown across the upper part of the breast, and a few dark brown streaks or spots upon that and the chin, with a clear white space between; the sides and flanks tinged with yellowish-brown; legs, toes, and claws, black. Males and females are alike in plumage.

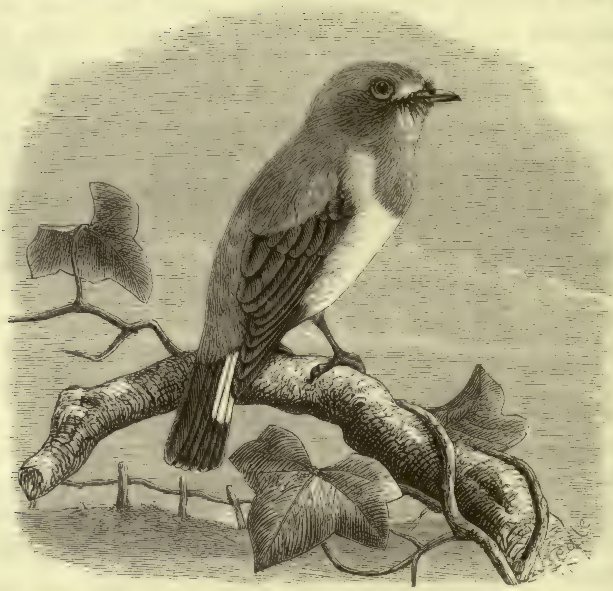
The whole length of the bird is five inches and five-eighths. From the carpal joint to the end of the longest quill-feather, three inches and three-eighths.

The young, when ready to leave the nest, are truly Spotted Flycatchers, each brown feather having a buff-coloured tip, the ends of the great wing-coverts forming a pale wood-brown bar across the wing; lower surface white. After their first moult, they may be distinguished from older birds by the broader buff-coloured outer margins of the tertials.

The vignette represents the breast bone of this bird.



PASSERES. *MUSCICAPIDÆ.*



Muscicapa parva, Bechstein*.

THE RED-BREASTED FLYCATCHER.

Among the many birds of central or eastern Europe whose occasional appearance in the British Islands has been lately detected by the daily-increasing number of ornithological observers, few have greater right to be included in this work than the little Flycatcher above figured—three examples, one of which was accompanied by a mate, having been procured. The announcement of the occurrence in England of this species was simultaneously made by Mr. George Gray in the 'Annals and Magazine of Natural History' for March, 1863 (3rd ser. xi. p. 228), and by Mr. Rodd in the 'Zoologist' (p. 8444) for the same month. The bird, after having been seen for some days, was shot on the 24th of January in that year by Mr. Copeland, of Carwythenack

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* Gemeinnützige Naturgeschichte Deutschlands, iv. p. 505 (1795).

House, in the parish of Constantine, near Falmouth; and this gentleman, writing a few days later to Mr. Rodd, says:—"We first observed it on a dead holly tree; this tree and the ground around the house were its favourite resort. It was particularly active, skimming the grass to within about a foot, then, perching itself, darted occasionally with a toss, resting either on a shrub or the wire fencing. There is another in the neighbourhood, for which a vigilant watch will be kept. I saw it a few days back in a plantation which is four hundred yards from my house." The specimen killed, which proved to be a female, was sent in the flesh to the British Museum, where its remains still are, the head having been unfortunately destroyed by mice, but quite sufficient was left to admit of the determination of the species by authorities so high as Mr. George Gray and Mr. Gould. The second example observed by Mr. Copeland was not obtained; but in the October following another bird of this species was killed, in company with some young Pied Flycatchers, upon one of the isles of Scilly, by Mr. Augustus Pechell and a nephew of Mr. Rodd's. This was a young male, as recorded by the gentleman last named (Zool. p. 8841 and Ibis, 1864, p. 131), and is now in his collection. On the 5th of November, 1865, as announced by Mr. Rodd (Ann. and Mag. Nat. Hist. 3rd ser. xvi. p. 447, and Zool. s.s. p. 31), a bird of this species again appeared in Scilly, this time on Tresco Island, and, after having been carefully watched by Mr. Pechell and Mr. John Jenkinson, it was killed, but so much injured by shot that its sex could not be determined.

The geographical distribution of this species when compared with that of others is somewhat exceptional. Though not an uncommon summer-visitor to some parts of the continent, the general line of its migration does not appear to be in the usual north and south direction, but strongly inclined from north-west to south-east; and the birds which breed in the central and eastern countries of Europe, instead of retiring, as do most of our summer-migrants, across the Mediterranean to Africa, would seem to turn their flight towards India. In Europe it has occurred as a straggler off the coast of Sweden, an example having been taken in the Baltic near Landsort, and it has been once killed, many years ago, near Copenhagen. MM. Jaubert and Barthélemy-Lapommeraye mention two specimens killed in the south of France, and, on Dr. Cara's authority, its occurrence in Sardinia, which last fact is denied by Dr. Salvadori in his new 'Fauna d'Italia.' From him however we learn that it appears, though very rarely, in Italy. Mr. Howard Saunders states that one example has been killed and another observed in Spain. Loche gives it as of occasional occurrence in Algeria; but it is not known to have been met with elsewhere on the African continent.

The ordinary limit of the Red-breasted Flycatcher's north-western range is found in the island of Rügen and the coasts of Mecklenburg and Pomerania; thence towards the south-east it becomes more plentiful, though generally a local species. In this direction it inhabits in summer Thuringia, Franconia, Bohemia, Austria, Hungary and Turkey, while it occasionally strays to Switzerland. Its limits to the north-east cannot so well be traced; but it seems to occur near St. Petersburg and across Russia to the Caucasus, occupying, one may presume, all the countries lying between this line and that before indicated. Marquess Doria found it not uncommon in spring near Teheran, and this observation points out the route it takes from its winter-quarters in Upper and Western India. On the opposite side of the Indian peninsula it is said to be replaced by a nearly allied species, generally referred to that named by Gmelin *Muscicapa leucura*, and this bird, migrating probably in a north-easterly direction, seems to have been mistaken for *M. parva* by some of the Russian naturalists, who have thought they had met with the latter in Eastern Asia even so far as Kamtchatka. Be that as it may, there is no doubt of the true *M. parva* being, as has been said, a winter-visitant to North-western India.

The Red-breasted Flycatcher was originally discovered by Bechstein in Thuringia, but it is worthy of note that modern

German ornithologists state that it has not been observed for some years past in the locality where he first found it. It arrives, say those who have observed its habits in Central Europe, in May and departs in August, chiefly frequenting, either singly or in small bands, the beech forests of the more mountainous districts and their outskirts, but sometimes also the smaller woods of the more level country. It is described as a restless little bird, keeping always among the tree-tops, perching on a dead twig and flitting through the leafy shade in the pursuit of insects, so that, to any one not well acquainted with it, it might pass for one of the Willow-Wrens, to the call-notes of some of which its own has a resemblance, though its song is said to be somewhat like that of the Pied Flycatcher. Towards the end of May, having paired, it begins to build. The nest is cup-shaped and rather deep, small and neat, composed of moss and wool, with a lining of hairs, and is placed either where a rotten branch in falling off has left a hole, or between the trunk of a tree and an obliquely ascending bough. The eggs are from five to seven in number, french white, closely mottled with fine streaks of pale rusty, sometimes so as almost to hide the ground colour, and measure from ·65 to ·61 by from ·51 to ·47 in. The young are hatched in June and fed by their parents with small beetles, which are not only caught in the air but sought for on the ground.

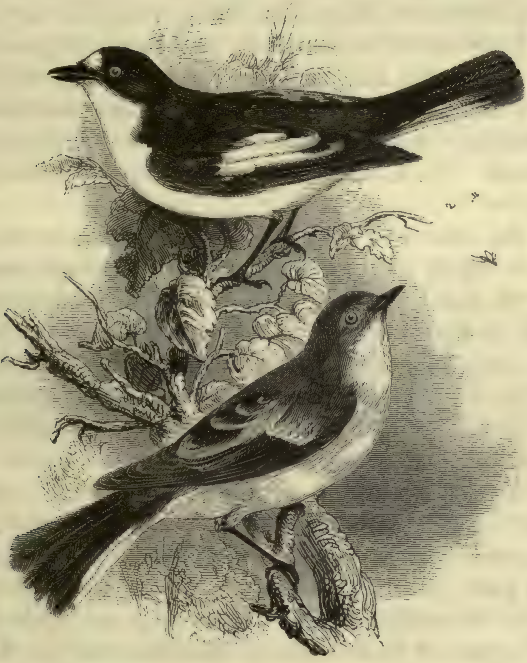
Von Nordmann in his 'Observations sur la Faune Pontique' (p. 198) remarks that this species breeds commonly in the mountain region of Abasia, very probably in that of Bessarabia and perhaps even near the steppes. The young arrive in the botanic garden at Odessa towards the end of July, and remain there until the end of October. At that time they do not keep, like the adults as described in Germany, to the tree-tops, but frequent the middle branches and often come to the ground for food. Each bird has its own station, and when two meet one is furiously pursued by the other with piercing cries which he likens to the clicking noise of small castanets. In the spring the adults in full plumage stop only a short time in the gardens. The liveliness of their motions and the white mark on their tail remind one, he says, of the smaller species of *Saxicola*.

The male of this Flycatcher in breeding plumage has much of the appearance of our familiar Redbreast. The top of the head is smoky-grey; the lores whitish; cheeks, ear-coverts and sides of the neck light bluish-grey; orbital feathers white; scapulars and back mouse-colour, passing into blackish-grey on the rump, the upper tail-coverts being edged with whitish. Wing-coverts and primaries dark hair-brown, the outer edge of the latter lighter; the first quill extremely short, the second considerably shorter than the third, which is slightly longer than the fifth but shorter than the fourth—the longest in the wing; the secondaries like the primaries but with the light edge broader and the tip whitish. Tail of ten feathers, blackish-brown—the middle pair entirely so, but the rest with more or less of a white basal or median patch extending across one or both webs, increasing in size from the outer pair, which have it only on the inner web, to the third pair, and then decreasing to the pair next the middle, which have it only on the outer web. Chin, throat and upper part of the breast light reddish-orange, belly white tinged on the sides and flanks with buff; lower tail-coverts like the flanks but paler; inside of the wings pale yellowish-buff. The bill is said to be horn-colour, the upper mandible darkest, irides hazel, legs, toes and claws dark brown.

A male in winter resembles the former, but the top of the head is like the back, and there is no trace of bluish-grey on its sides; the throat is dull buff with dusky transverse bars, and the whole lower surface more suffused with dull buff.

The old female has a general likeness to the male in winter; but the whole upper surface inclines to hair-brown, the tips of the wing-coverts and tertials are buff, the lower surface except a band of light brown across the breast is paler.

The young in autumn resemble the female; but the colours are everywhere lighter, and there is hardly any trace of buff beneath. The nestlings are said to have a spotted plumage, which they lose at a very early age.



Muscicapa atricapilla, Linnæus[*].

THE PIED FLYCATCHER.

Muscicapa atricapilla.

The Pied Flycatcher is in England much less numerous as a species than the well-known Spotted Flycatcher, and has a comparatively restricted distribution; but it is also a summer-visitor to this country, arriving in April, and leaving to go southward in September. It appears to be most plentiful in the vicinity of the Lakes of Cumberland and Westmoreland; and in some of its habits, particularly in its mode of feeding, as also in the nature of its food, it resembles its commoner congeneric companion; but with these distinctions,—that the male possesses a song, which one observer, Dovaston (Mag. Nat. Hist. v. p. 83), says is extremely like that of the Redstart, its notes being varied and pleasing; that the nest is almost invariably placed in the hole of a decayed tree or of a building; and that the birds are exceedingly noisy and clamorous when their retreat is approached. Mr. T. C. Heysham has furnished the information that—

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[*] Syst. Nat. Ed. 12, i. p. 326 (1866).

"In the season of 1830, a pair had a nest in the identical hole where this species had bred for four successive years. On the 14th of May this nest contained eight eggs, arranged in the following manner: one lay at the bottom, and the remainder were all regularly placed perpendicularly round the sides of the nest, with the smaller ends resting upon it, the effect of which was exceedingly beautiful."

Its nest is a loose assemblage of roots and grass, with a few dry leaves, sometimes of a large size, dead bents, and hair: the eggs measure from ·73 to ·64 by from ·55 to ·5 in., or exceptionally small ones only ·52 by ·43 in., and are of a uniform pale greenish-blue colour, with occasionally a few fine specks of reddish-brown. The young are hatched about the first or second week in June. Mr. Blackwall has recorded (Ann. and Mag. Nat. Hist. xv. p. 167) an instance in which the young of a pair, which had for a long series of years occupied in safety a hole in his father's house, were stung to death by a swarm of bees, whereupon in the following year the birds still finding themselves molested by the bees repaired to a hole in a neighbouring wall.

Pennant mentions an example of this bird killed near Uxbridge in Middlesex; and a good many have since been observed in the same county, as well as in all those of the south and east from Cornwall to Norfolk. In the midlands it appears more rarely, but it has been noticed once or oftener in Leicester, Derby, Stafford, Worcester and Hereford. Further north its occurrence is less irregular, and in some parts of the West Riding of Yorkshire, Durham and, as above stated, certain localities in the Lake district, it has its headquarters in England, though it also breeds yearly in a few places in North Wales, and the English counties of the Welsh border, and is recorded as having occasionally done so in North Devon, Somerset, Gloucester, Oxford, Wilts, Dorset, the Isle of Wight, Surrey and Norfolk.

From thence northward it has been noticed, according to Mr. Robert Gray, along the eastern side of Scotland, from Berwickshire to Caithness, while Mr. E. S. Hargitt has obtained its eggs from Invernessshire, and Messrs. Baikie and Heddle say that it is often seen in the Orkneys. It has not been observed in Ireland. Herr H. C. Müller states that it has once occurred in the Færoes, and it is a common summer-visitant throughout Norway and Sweden, breeding so far as lat. 68° N., while it occasionally appears even on the shores of the Arctic Ocean, and it is found in the interior of Finland. Its eastern limits cannot be traced, but it seems to be rare in most parts of Russia, though common, according to Von Nordmann, in the southern governments. De Filippi includes it among the birds of Western Persia. It is a very scarce summer-visitant to Palestine, though remaining there to breed. Dr. von Heuglin observed it in Egypt, but only on its northward passage. Mr. Sharpe has received it from the Gambia. MM. Webb and Berthelot found it in Teneriffe. Mr. Drake saw it in Morocco, and several naturalists have observed it in Algeria. Returning to Europe, it is common in spring in Portugal and Spain and breeds, according to Mr. H. Saunders, in Andalucia. Thence it is pretty generally distributed through the rest of the continent and occurs on the islands of the Mediterranean.

A male killed in the spring, immediately on the arrival of the species in this country, has the beak black; the irides dark brown; the forehead white; head, neck, back, and greater wing-coverts, a mixture of dusky and pure black; rump and upper tail-coverts smoke-grey; primaries dusky black; smaller wing-coverts smoke-grey; greater wing-coverts and tertials broadly edged with white; tail of twelve feathers, the outer and part of the inner web next the shaft of the outer and second pairs white, the third pair white on a small portion of the outer web only, all the rest of these and the other tail-coverts black: all the lower parts of the body pure white. The legs, toes and claws, black.

The whole length of the bird five inches and one-eighth. From the carpal joint to the end of the longest primary three inches and one-eighth: the first quill less than half the length of the second; which nearly equals the fifth, and is shorter than the fourth; the third is the longest in the wing.

An adult male in the breeding season, as represented in the upper figure of the woodcut, resembles the bird just described but has the upper part of the head and neck dark brownish-black; the back of a decided black; and the primaries and secondaries brownish-black.

An adult female, killed in summer, wants the white frontal patch; the head, neck, back, and wing-coverts, dark hair-brown; primaries brownish-black; greater coverts and tertials edged with dull white; tail-feathers as in the male, but less bright: under parts dull white.

A young male of the year, as represented in the lower figure, killed near London in September, wants the white frontal mark; the head, neck, back and wing-coverts are dark hair-brown, as in the female, the last edged with yellowish-white; primaries, secondaries and tertials, black; the latter margined with white, but their edges not so broad as in the adult male: the tail-feathers precisely as in the old male; chin and under tail-coverts white; breast, belly and flanks, dull white tinged with pale brown.

The genus *Muscicapa* has been split into several divisions, and, by some authors, the Spotted Flycatcher is made the type of a genus *Butalis* and the Red-breasted Flycatcher that of *Erythrosterna*. It does not seem expedient here to follow the example. *Muscicapa collaris*, a species much resembling the present, has been said to have occurred in this country but proof of the fact is wanting.*

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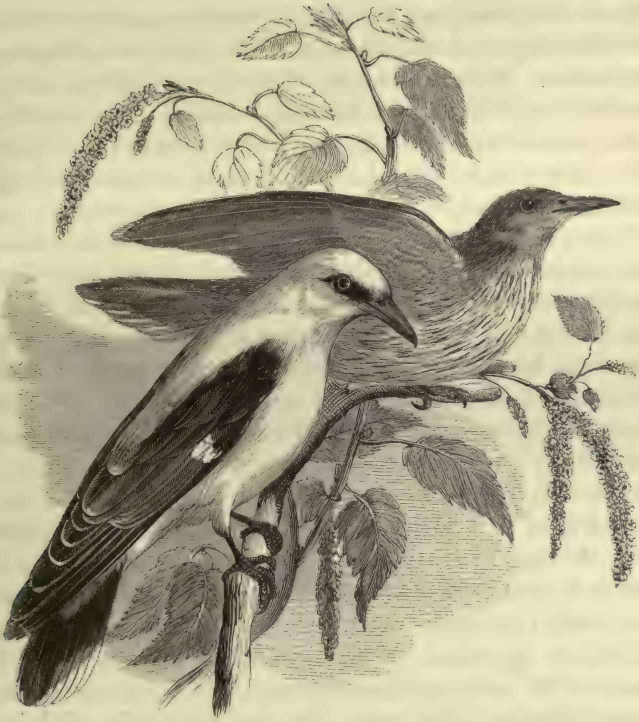
* Mr. Edwin Brown has recorded (Mosley's Nat. Hist. of Tutbury, p. 385, pl. 6) the occurrence in Derbyshire of two examples of *Vireosylvia olivacea*, a bird which though often called a Flycatcher belongs to the very distinct and purely American family *Vireonidæ*—a group having perhaps some affinity to the *Oriolidæ*.



ORIOLUS GALBULA, Linnæus*.

THE GOLDEN ORIOLE.

Oriolus galbula.

ORIOLUS, *Linnæus* †.—Bill long, conical, and at the base moderately broad, decurving to the point which is notched ; nostrils basal, lateral, naked, pierced horizontally in an extended membrane. Wings long, with the first quill short ; the third or fourth the longest in the wing. Tail moderate, slightly rounded. Tarsi covered in front with broad scales, shorter than or only as long as the middle toes, which are joined at the base to the outer toes.

LIKE the species last described, though much more rare, the Golden Oriole is also a summer-visitor to Britain, a few

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[*] Syst. Nat. Ed. 12, i. p. 160. [†] *Loc. cit.*

stragglers being observed almost every year, but always between spring and autumn. This bird makes its annual visit to the European continent from the countries south of the Mediterranean in the month of April, and returns in September. It is at the end of April or the beginning of May that specimens are usually obtained on our southern coast; and from those that pass over France and Germany in a north-western direction, an example is occasionally procured in the maritime counties of our eastern coast.

Very little is known of the habits of the Golden Oriole in this country; for the brilliant plumage of the male always attracts attention, and, though being really far from rare, it is almost invariably pursued with the greatest eagerness and shot down by some of those persons who imagine that they are thereby aiding the cause of natural history; fortunately greater facilities for its observation occur on the Continent, and in Italy particularly these birds are common.

Bechstein says, they generally frequent lonely groves, or the skirts of forests, always keeping among the most bushy trees, so that it is rarely seen on a naked branch. They always frequent orchards in the fruit season. Vieillot also says that they frequent wooded countries, are shy and difficult to approach. These birds, he adds, are sometimes deceived by an expert sportsman, who advances towards them whistling their note; but the ear of the bird is so correct that a single mistake or false note, made in the imitation of his song, is a sufficient hint to the bird, and he takes wing instantly. Swainson, speaking of the habits of the Orioles generally, says, they live in small flocks, fly well, and frequent high trees, among the foliage of which they seek for caterpillars, soft insects, and fruits.

The Golden Oriole is the only European species of the genus, and its flat and saucer-shaped nest is very different in the style of its architecture from those of nearly all other birds, being placed in and suspended under the horizontal fork of a bough of a tree, to both branches of which it is firmly attached. The materials used to form the nest are sheep's wool, fibres of roots and long slender stems of grass, which are so curiously interwoven as mutually to confine and sustain each other; the lining consists of the flowering heads of grasses. The vignette at the end of this article represents a nest of this bird, taken from a specimen sent to the Zoological Society by Professor Passerini of Florence. Another nest of this bird, said to have been taken in Suffolk, and exactly resembling the one just mentioned, is represented in Meyer's 'Illustrations of British Birds.' The eggs are usually four or five in number, measuring from 1·4 to 1·1 by from ·9 to ·78 in., and are of a shining white or warm cream-colour, with a few very dark reddish-purple spots and a few grey specks, which are often confluent and blurred at the edges. The female is said to be so tenacious of her eggs as to suffer herself to be taken with the nest. Bechstein says that the parents rear but one brood in a season. The food of this species is various, consisting of insects and their larvæ, with figs, cherries, grapes, and other fruits in their season.

The voice of the Golden Oriole is loud, full and flute-like. From its call-note some of the common names by which this bird is known in various countries of Europe, and especially in certain parts of France and Spain, have been thought to be derived, but it would rather seem that they are corruptions of the Latin *aureolus*, and have reference to the golden colour of the plumage.* Of quite other origin, however, are certain names given to this species in Germany, of which *Weidwall* and *Witwell* will serve as examples. With these is clearly cognate the English "Witwall," though when this is nowadays used at all it is applied to the Green Woodpecker, probably as the bird which by its colours most recalled to our Teutonic forefathers the continental species so familiar to them.

In April, 1824, a young male in its third stage of plumage, to be presently described in full, was shot at Aldershot, in Hampshire, and having been purchased by the late Dr. Thackeray, by whom it was obligingly lent for the use of this work, has passed with the rest of his collection to the Museum of Eton College. But there is no need to enumerate the various examples of this species which have been obtained in England, for, as has been said, it appears almost every spring in the southern and eastern counties, from Cornwall to Norfolk, and especially often in the first and last of them, Sussex, Kent, and Suffolk being the next in order of abundance. In the west of England it has occurred by forty at a time ; but most generally it appears in pairs, though the female from her less conspicuous plumage often escapes observation ; and the stupid practice of almost invariably destroying on their arrival these birds, some of which would doubtless, if undisturbed, breed as freely in our woods and orchards as they do on the continent, is a matter of deep regret to every right-thinking ornithologist. It must not however be supposed that this happy result would invariably follow upon protection being accorded to the Golden Oriole, for in some of the rare cases in which the birds have been unmolested, or even pains taken to preserve them, they have disappeared after a short sojourn. In Scilly, where the species has perhaps been more often observed and less frequently disturbed than in any part of the British Islands, suitable haunts are obviously wanting; but there are other places where no such cause can be assigned for their not stopping, and it would seem that though willing to make a temporary resting place, the migratory impulse is not fully expended, and they strive to reach some more distant quarters. In Dorsetshire Mr. Octavius Pickard-Cambridge writes (Zool. p. 4366) that a male bird was constantly seen in a garden at Bloxworth for more than a week in May, 1854, and though a large extent of woodland and orchard adjoins the place, yet nothing came of it. Some nests however are reported to have been found, and especially in Kent. Thus Mr. J. Pemberton Bartlett states (Zool. p. 824) that in June, 1836, one was discovered in an ash-plantation near Ord, from which the young were taken ; but, though every care was shewn them, they did not long survive their captivity. Mr. J. B. Ellman says (Zool. p. 2496) that at the end of May, 1849, a nest was, with the owners, obtained near Elmstone. It was suspended from the extremity of the top branch of an oak, was composed entirely of wool, bound together with dried grass, and contained three eggs. Mr. Hulke, in 1851, also recorded (Zool. p. 3034) a third, of which he was told that it was found about ten years previously in Word Wood near Sandwich by a countryman who took the young and gave them to his ferrets; and Mr. More, on the authority of Mr. Charles Gordon, mentions one at Elmstead, adding that the bird appeared again in the same locality in 1861. Mr. Howard Saunders and Lord Lilford have informed the Editor that, in the past summer of 1871, they each observed, in Surrey and Northamptonshire respectively, a bird of this species which probably had a nest. Messrs. Sheppard and Whitear speak of a nest said to have been found in a garden near Ormsby in Norfolk; but the eggs formerly in Mr. Scales's collection, which it has been thought were taken in that county, were really brought from Holland, and the Editor is not aware of any collector who can boast the possession of eggs of this species laid in Britain.

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* See the word *Loriot* in Littré's 'Dictionaire de la Langue Française,' ii. p. 344. Paris: 1869.

In Ireland, according to Thompson this species has been obtained or observed in the counties of Kerry, Cork, Waterford, Wexford, Wicklow and Down, all it may be remarked in the south or east of the island, while April 1870, as recorded by Mr. W. A. Hackett (Zool. s.s. p. 2222), was particularly distinguished by the visit of several of these birds to the county Cork. Mr. Robert Gray mentions one killed in June 1868 in the Isle of Man, and that as regards Scotland, it has occurred in the Isle of Arran, on the west, and on the east in Berwickshire, near Edinburgh, and in the counties of Fife and Ross.

In Germany, Holland and France, and generally over the continent of Europe, this bird is not uncommon. The most northern limit which seems to have been recorded for its occurrence is the north coast of Iceland, where according to information supplied to Dr. Kjærbölling one was found dead in December, 1843—the season of the year intimating equally with the inhospitable locality the fact that the bird must have gone far astray. It does not seem to have been recorded from Norway and has been met with only some half dozen times in Sweden, though it has been said to breed in the latter, but the statement is questionable. In Finland, on the contrary, it is pretty common in the south and towards the east of the middle. Pallas says it occurs generally in the woodland districts of the temperate and southern parts of Russia and thence across Asia to Dauuria, and more lately Herr Radde observed it near Irkutsk, but further to the east its place is taken by an allied species. According to Prof. Brandt, Lehmann observed it in the country of the Bashkirs, but De Filippi found it rare in Western Persia. It was sent to the Zoological Society from Erzeroom and Trebizond. It is known to breed in Asia Minor and Palestine, and occurs very generally all over Africa, from Egypt to Natal and Damaraland, as well as on the Western and Northern coasts. It was said by Sganzin to occur in Madagascar. Mr. Frederick Godman records it from the Azores and Mr. Harcourt from the Madeiras.

The adult male has the bill orange-brown; from the base to the eye a dark coloured streak; irides lake-red: the whole of the head, neck and body, above and below, with the upper and under tail-coverts, bright gamboge-yellow; the wings black; the ends of the feathers of the spurious wing yellow; the outer edge of the primaries, and the tips of the secondaries and tertials, yellowish-white; upper surface of the two middle tail-feathers black, tipped with yellow; the outer tail-feather on each side has its basal half black, the remaining portion yellow: in the tail-feathers on each side between the outside feather and those in the middle, the black occupies a larger space in each successively: under wing-coverts yellow; under surface of the wing-quills and the dark part of the tail-feathers, greyish-black; legs and toes lead-colour; the claws, like the bill, orange-brown.

The whole length of the bird is nine inches and a half. From the carpal joint to the end of the longest feather in the wing, six inches and a quarter: the first wing-feather not quite half as long as the second, which is not so long as the fourth, but longer than the fifth; the third the longest in the wing.

The female has not the dark streak between the bill and the eye; the upper surface of the plumage is oil-green; upper tail-coverts greenish-yellow; wing-coverts brocoli-brown; the quill-feathers blackish-brown; the ends of the spurious wing-feathers tipped with white; outer edges and ends of the quill-feathers margined with dull white: upper surface of tail brocoli-brown, tinged with yellow at the base, streaked and tipped with brighter yellow; throat, breast, and under surface of the body, dull greyish-white, streaked longitudinally with dark brown on the shafts of the feathers; sides of the body and flanks yellow, streaked with dark brown; under tail-coverts pure yellow; under surface of tail-feathers yellow mixed with dull grey.

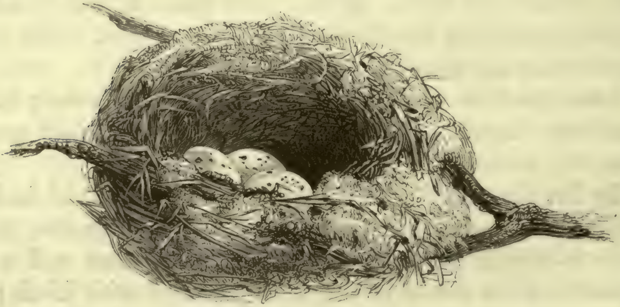
According to Macgillivray, the young, in its first plumage, is of a dusky yellowish-grey tint above, each feather having the middle greyish-brown; the lower parts yellowish-white, each feather with a brown median line; the sides and lower tail-coverts bright yellow; the wings and tail brown, marked with yellow, as in the adult. The male is easily distinguished from the female by its lighter colour. The irides are brown; the beak dark grey.

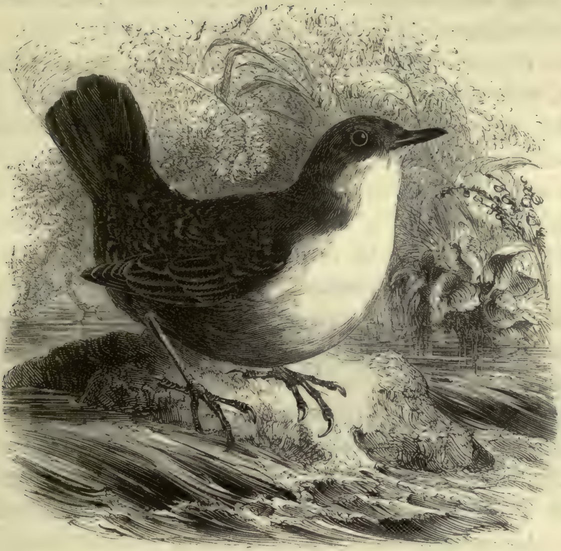
After the first moult, the young resemble females; but it has been stated that the latter as they grow older greatly resemble the adult males.

In Dr. Thackeray's British-killed specimen, which had not attained the truly adult male livery, the upper surface of the body is tinged with wine-yellow: the scapulars and a few feathers on the centre of the back streaked with black; the wings not so decidedly black: the spurious wing-feathers are slightly tipped with greyish-white, not bright yellow, on the distal half of their length, as in the old male first described; the quill-feathers with narrow lighter-coloured outer margins and tips: the feathers of the tail have the proximal two-thirds black, the rest yellow: under surface of the body yellow, tinged with green, and still retaining faint indications of darker streaks in the direction of the shafts of the feathers.

It seems that the male does not obtain its brilliant yellow and black plumage until the third year, and according to information received from the late Mr. Hoy, "some pairs are observed breeding, in which you can scarcely distinguish male from female; others still further advanced, but the plumage is not bright." This, it will be observed, is in accordance with the descriptions here given as those of the second and third summer.

The Oriole so frequently received from India, *Oriolus kundoo*, which is by some considered to be identical with the bird under description, is, however, distinct, and may be immediately recognized by having the dark mark behind the eye, reaching to some distance above the ear coverts; the wing is also much shorter, not reaching near so far towards the end of the tail, and the bill proportionally longer.





Cinclus aquaticus, Bechstein*.

THE DIPPER.

Cinclus aquaticus.

Cinclus, *Bechstein* †.—Bill moderate, slightly ascending, angular and higher than broad at the base ; straight, compressed and rounded near the tip : the upper mandible slightly decurving at the point. Nostrils basal, lateral, placed in a depression, cleft longitudinally, partly covered by a membrane. Gape very narrow, and not furnished with bristles. Wings short, broad and convex : the first feather very short ; the second not so long as the third or fourth, which are nearly equal. Tail short. Legs feathered to the tibio-tarsal joint ; tarsus longer than the middle toe ; the lateral toes equal in length ; the outer toe slightly connected with the middle toe. The whole body closely covered with down. Sternum with the posterior margin entire.

Considerable interest is attached to the natural history of the Dipper, or Water-Ouzel, from the diversity of opinions that have existed in reference to its power not only of diving, which was believed by some to be accomplished without any perceivable muscular effort, but also, as has been asserted, of walking at the bottom when under water with the same ease that other birds walk on dry land.

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* Ornithologisches Taschenbuch, i. p. 206 (1802).

† *Tom. cit.* p. 205.

The Dipper frequents clear, rocky mountain-streams, diving with great facility, and feeding principally, if not entirely, upon the various aquatic insects and small fresh-water-mollusks with which they abound.

The muscles and other parts of the vocal organs, as shewn by a specimen sent for dissection from Wales by Mr. John Morgan, are similar to those of a Thrush; and there is nothing in its internal structure that could induce the belief that it possessed the powers which, as mentioned above, have been so frequently attributed to it. Its short wings are well adapted for progress under water; but, clothed with its feathers, the specific gravity of the Dipper must be considerably less than that of an Otter or a Beaver,—and we know that diving and remaining under water is not accomplished by these animals without great and continued exertions. Accordingly Macgillivray, whose account of the Dipper is one of the most complete and perfect ever published, observes (Naturalist, 1837, p. 108):—

"I have seen it moving under water in situations where I could observe it with certainty, and I readily perceived that its actions were precisely similar to those of the Divers, Mergansers, and Cormorants, which I have often watched from an eminence as they pursued the shoals of Sand-eels along the sandy shores of the Hebrides. It, in fact, flew—not merely using the wing from the carpal joint, but extending it considerably and employing its whole extent, just as if moving in the air. The general direction of the body in these circumstances is obliquely downwards; and great force is evidently used to counteract the effects of gravity, the bird finding it difficult to keep itself at the bottom. Montagu well describes the appearance which it presents under such circumstances:—'In one or two instances, where we have been able to perceive it under water, it appeared to tumble about in a very extraordinary manner, with its head downwards, as if picking something; and at the same time great exertion was used, both by wings and legs.' When searching for food, it does not proceed to great distances under water; but, alighting on some spot, sinks, and soon reappears in the immediate neighbourhood, when it either dives again, or rises on the wing to drop somewhere else on the stream, or settle on a stone. The assertion of its walking below the water, which some persons have ventured, is not made good by observation nor countenanced by reason. The Dipper is by no means a walking bird: even on land I have never seen it move more than a few steps, which it accomplished by a kind of leaping motion. Its short legs and long curved claws are very ill adapted for running, but admirably calculated for securing a steady footing on slippery stones, whether above or beneath the surface of the water."

The Dipper may be said to be local rather than rare, but is only by chance found in the counties which do not possess the streams of the kind it most loves to haunt. Thus its distribution in the British Islands is chiefly affected by the nature of the country. Mr. More has ascertained that it breeds occasionally in Cornwall and Dorset, but regularly in Devon, Somerset, probably throughout Wales, Monmouthshire, Herefordshire, Salop, Staffordshire, Cheshire, Derbyshire, Yorkshire and Lancashire, and thence generally northward in all the Scotch counties, reaching the Hebrides but not the Orkneys or Shetlands. It also, according to Thompson, inhabits suitable localities in Ireland. In many of the districts named, it is (or, if not persecuted, would be) far from uncommon; and, though certainly resident as a species, individuals in autumn and winter not unfrequently occur in the eastern and southern counties of England, in such cases usually making their temporary sojourn on some rapid brook or mill-race, where their brightly-contrasted plumage and peculiar habits speedily attract attention. As a songster, the Dipper is remarkable for its musical performance being by no means limited to the breeding-season, but, beginning in autumn*, it is frequently heard among the frosts and snows of midwinter.

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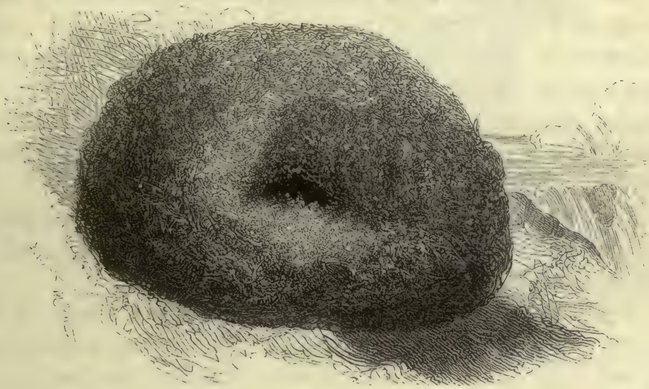
* The Editor has been kindly informed by Professor Flower that in the Thuringian Forest he observed the Dipper in full song on the 3rd of October, 1871.

At present it seems more cannot be said of the range of our Dipper on the continent than that it seems to occur generally in suitable localities throughout Central Europe; for the Dipper which inhabits Scandinavia is by many ornithologists regarded as a distinct species under the name of *Cinclus melanogaster*, while again that which is found in Switzerland and most of the mountainous parts of Southern Europe is believed to form a third species, the *C. albicollis*. Thus much has been set forth in a most able paper on the birds of this genus (Ibis, 1867, p. 109) by Mr. Salvin; but the view he then took has been somewhat unsettled by the subsequent discovery by Canon Tristram (*tom. cit.* p. 466) that it is the Scandinavian form which breeds in the Pyrenees. That *C. melanogaster* occasionally wandered from its northern home (and it is found in Lapland a long way within the Arctic Circle), was already known and caused no surprise; but the fact of its inhabiting a mountain-range so far to the south, while the intervening countries are presumably occupied by a different form, makes a belief in the specific distinctness of the two somewhat hard to accept. For this reason therefore, it has not been thought advisable to include the black-breasted Dipper in this work under a separate heading, though there is excellent authority for its occasional occurrence in England. Mr. Stevenson, in his 'Birds of Norfolk,' has shewn that nearly all the Dippers killed in that county want the chestnut-brown band on the breast, and have every indication of being of Scandinavian origin. Mr. J. H. Gurney, Junior, too, has in his collection a black-breasted Dipper which was obtained in Yorkshire.

The Dipper is secluded in its habits; and it rarely happens that more than two are seen together except in summer, when the parents are accompanied by their young. Its flight is rapid and even, not unlike that of the Kingfisher; while it much resembles the Wren in its song, its habit of elevating and jerking its tail, its general manners, and the form of its domed nest. This last, as here represented from a specimen received from Yorkshire by the late Mr. Salmon, consists of an irregularly-shaped exterior casing, some seven or eight inches deep, and ten or twelve inches across, composed of various species of mosses, chiefly of the genus *Hypnum*, finely felted, so as to form a mass not easily torn asunder, especially in its lower part. In front is a hole, just admitting the passage of the bird, and opening upon the nest itself, which is cup-shaped, from five to six inches in diameter, built of grass-stems and lined with dead leaves. Placed in a recess by the side of a stream or under a projecting stone, forming part of a cascade, and behind the sheet of falling water, the structure, large as it is, so much resembles a moss-covered rock, that it may easily escape observation. The Dipper breeds early in the season. The eggs are five or six in number, measuring from 1·05 to ·97 by from ·75 to ·72 in., somewhat pointed at the smaller end, and of a pure, but not glossy, white.



Macgillivray, who examined the contents of the stomach in these birds on various occasions, found only beetles and the animals of freshwater-shells belonging to the genera *Limnæa* and *Ancylus*. Caddis-worms—the larvæ of *Phryganeæ*, besides those of various *Libellulæ*—dragon-flies, *Ephemeræ*—may-flies, and *Hydrophili*—water-beetles, have also been mentioned, and these are known to be among the aquatic insects most destructive to fish-spawn. Yet in some places, particularly in Scotland, where this bird is known as the

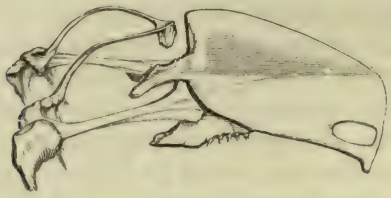
Water-Crow, Water-Pyet and Kingfisher, it is foolishly destroyed by every possible device, under the mistaken idea that it haunts the spawning-beds to feed on the ova of the Salmon and Trout, while examination of its gizzard proves it to be one of the best guardians of a fishery.

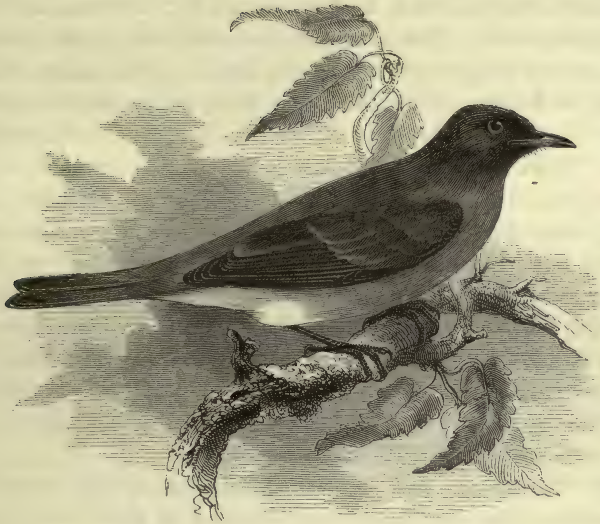
The bill is brownish-black; the irides hazel; the margin of the eyelids white; the head and neck umber-brown; back, wings and wing-coverts, rump, tail, sides, flanks and under tail-coverts, brownish-black; the margins of the wing-coverts and the tips of the feathers of the body, of a lighter greyish-black; chin, neck and upper part of the breast, pure white; lower part of the breast chestnut-brown; legs, toes and claws brown. Females resemble the males.

The whole length of the specimen described was seven inches and one quarter; from the carpal joint to the end of the wing, three inches and three-eighths.

The young bird in its first plumage has the whole of the upper parts dull greyish-brown; the wing-coverts and tertials tipped with greyish-white; the chin white; the feathers of the front of the neck and breast pale buff tipped with brown; belly, sides and vent, grey, with darker lines. In this plumage it appears to be the Penrith Ouzel of Pennant.

The vignette below represents the breastbone of the Dipper, which, when fully adult, has the notches at the posterior end bridged across, and, thus presenting an uninterrupted margin, differs from that of any other British species of the order *Passeres*.





PYCNONOTUS CAPENSIS (Linnæus*).

GOLD-VENTED THRUSH.

Turdus aurigaster†.

PYCNONOTUS, *Kuhl* ‡.—Bill moderately long, somewhat decurved and laterally compressed, nostrils basal, oval and placed in a groove, a few bristles at the gape. Wings moderate and rounded, with the fourth, fifth and sixth quills nearly equal and longest. Tail moderate and almost square. Tarsi stout, generally covered in front with a single scale; toes moderate, the lateral toes unequal, the hind toe rather long and strong.

IN the month of January, 1838, this South-African bird was shot at Mount Beresford, three miles and a half from Waterford, by a lad while out shooting Blackbirds and Snipes. Considering it a hen of the former, he sold it to Dr. Robert Burkitt, who skinned and preserved it: the sex, however, was not noted. The specimen was exhibited by the late Mr. Thompson at the meeting of the British Association held at Cork in August, 1843; and the brief notice in that part of the 'Report' of the Association for that year which contains the "Transactions of the Sections" (p. 71) seems to be the first printed announcement of the occurrence. In May, 1845, the same gentleman made known (Ann. Mag. Nat. Hist. xv. p. 308, note) a few more particulars of the fact, as above given, and in January, 1846, Dr. Burkitt presented the skin to the Museum of Trinity College, Dublin, where, however, it is unfortunately not at the present time forthcoming.

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* *Turdus capensis,* Linnæus, Syst. Nat. Ed. 12. i. p. 295 (1766).

† Not *Turdus aurigaster*, Vieillot.

‡ Isis, 1826, p. 973. Prof. Agassiz (Nomenclator Zoologicus. Aves, p. 66) quotes "Pycnonotus *Kuhl* Av. col. nom. syst. 1820"; but the reference is incorrect, and the Editor cannot supply an earlier date for the genus than that now given, when it was used by F. Boie as of Kuhl's foundation.

Dr. Burkitt most kindly allowed me the use of his bird for this work, and the figure and description here given were taken from this British-killed specimen.

By Thompson, and in former editions of this work, the specimen just mentioned was referred to the *Cudor* figured by Le Vaillant in his 'Oiseaux d'Afrique' (pl. 107, fig. 2) and, in 1818, named by Vieillot (Nouv. Dict. d'Hist. Nat. xx. p. 258) *Turdus aurigaster;* but a comparison of Le Vaillant's figure with the description of the bird shot in Ireland has for some time convinced several ornithologists, and among them the present Editor, that this reference was erroneous. The *Cudor*, though belonging to the same genus, differed very remarkably in plumage, possessing a head which, if not black, was decidedly darker than the shoulders and back, while the throat and lower parts generally were white. In the Waterford bird, on the contrary, the head was but little darker than the rest of the upper parts, and the lower parts, or at least the throat and breast, were but little lighter. There can therefore be no doubt as to the latter having been mistaken for Le Vaillant's *Cudor*, which, it may be mentioned, has been shewn by Prof. Sundevall not to be an African bird at all, but a species long known from Java; while, on the other hand, the description which follows, and a coloured drawing of the Waterford bird, kindly lent by Dr. Burkitt to the Editor, induce him to refer it, almost without hesitation, to the very well-known *Pycnonotus capensis* *—a common species at the Cape of Good Hope, of which Mr. Edgar Layard in his 'Birds of South Africa' writes as follows (p. 138) :—

"These birds are found in great abundance in the neighbourhood of Cape Town, and indeed throughout the whole colony. They migrate according to the fruit season, and are especially partial to figs and grapes. They also feed largely on the berries of the 'Persian Lilac,' and when that tree is in fruit, any number might be shot by a person lying in ambush near. When feeding, they keep up a continual chattering, and as they usually go in flocks of ten or fifteen in number, their presence is soon detected.

"These birds conceal their nests so skilfully, that they are rarely detected, notwithstanding their numbers. It is composed of rootlets, lined sometimes with hair and feathers, and is generally placed in the fork of a tree or bush. The eggs, three or four in number, are a lovely pale pink, densely spotted and blotched with dark pink and pale purple, presenting a most beautiful appearance." One sent by Mr. Layard to the Editor measures ·95 by ·65 in.

The bill black; the irides probably dark brown; the head, neck, back, wings and tail uniform umber-brown; the feathers on the forehead and crown slightly elongated, forming a crest when elevated, the plumage of the whole head being a shade darker in colour than that of the body; throat and neck in front clove-brown, becoming lighter on the breast, and passing into a dull white on the belly; vent and under tail-coverts brilliant king's yellow; legs, toes and claws black. The whole length of the bird seven inches and a half; the wing, from the anterior joint to the end of the longest quill-feather, three inches and a half; the first quill-feather very short, about one inch in length; the second three-quarters of an inch longer than the first, but shorter than the third: the fourth feather the longest in the wing; the tail very slightly forked.

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* The mistake is more singular since the present species, having been already figured by Brisson (Ornithologie, ii. p. 259, tab. 27, fig. 3) as the *Merle brun du Cap de Bonne Espérance*, was also very fairly represented by Le Vaillant in his work before quoted (pl. 105) under the name of the *Brunet*, originally conferred upon it by De Montbeillard (Hist. Nat. des Ois. iii. p. 390) and subsequently adopted by Latham (Synops. ii. part i. p. 70). If the rule of priority extended to vulgar as to scientific names it would be necessary to use the last author's "Brunet Thrush" for this species—an outlandish term which would certainly have the merit of showing that the bird, however it may have reached Ireland, as there is no room to doubt it did, has no just claim to be considered otherwise than a foreigner.

The birds constituting the genus *Pycnonotus*, regarding the present species as its type, are not very nearly allied to the Thrushes; and modern ornithologists generally keep them in a separate family or sub-family, which according to usage should apparently take its title from Temminck's genus *Ixus** (commonly but inaccurately spelt *Ixos*) as the first belonging to it that received a name. The group contains a good many species, inhabiting various parts of Africa and Asia, and among them are the Bulbuls so celebrated in eastern song. One species, *P. barbatus* (Desfontaines)—the *I. obscurus* of Temminck—is found in North-west Africa and, as is said, in Spain; while it has been stated (Zool. s.s. p. 228) to have occurred in England. It may be easily distinguished from the present bird by wanting the yellow vent. Three "Palestine Nightingales" which were no doubt examples of *P. xanthopygius* (recently asserted by Drs. Finsch and Hartlaub to be identical with the widely spread African *P. nigricans*) are said by Thompson (B. Ireld. i. p. 154) to have been obtained for the aviary of the Zoological Garden at Dublin. This species differs from *T. capensis* by being more slate-coloured above and having the abdomen white; but the fact of its introduction to Ireland as a cage-bird suggests a possible explanation of the extraordinary occurrence of Dr. Burkitt's example near Waterford.

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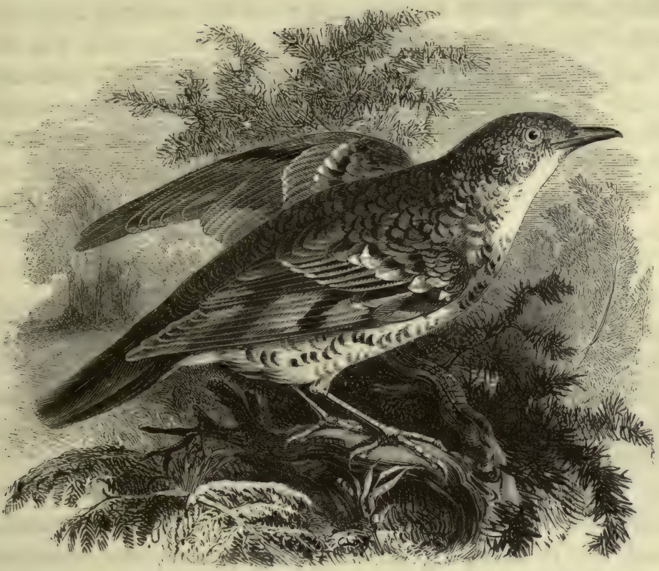
* This group, established in 1825, was no doubt intended (Recueil des Oiseaux, livr. 64) to be identical with the *Pycnonotus* of Kuhl, with whose views, though then unpublished, Temminck was clearly acquainted; but as he selected for the type of the former a species which is usually and justifiably considered to be generically separable from that of the latter, the two names do not clash, and there seems to be no reason why both should not stand—each in a restricted sense.



TURDUS VARIUS, Pallas.*

WHITE'S THRUSH.

Turdus Whitei †.

TURDUS, *Linnæus*‡.—Bill moderate, straight, convex above; point of the upper mandible compressed, notched and slightly decurved; gape furnished with a few hairs. Nostrils basal, lateral, oval, partly closed by a membrane. Wings with the first feather very short; the second shorter than the third or fourth, which are generally the longest. Feet with the tarsus longer than the middle toe; the outer toe connected with the middle toe at the base.

BY the kind permission of the late Lord Malmesbury, I am enabled to give a figure from a male Thrush shot by him at Heron Court, near Christchurch, January the 24th, 1828, as first announced by Mr. Eyton; who, believing it to be a new species, conferred upon it, in honour of Gilbert White of Selborne, the names above cited; and his lordship allowed me the free use of this specimen for close examination and description. Early in December, 1842, a bird, in every respect agreeing with the example just mentioned, was obtained by Mr. Spraine at Bandon in the county of Cork, and passing almost immediately into the possession of Professor Allman, its occurrence was by him recorded (Ann. and Mag. Nat. Hist. xi. p. 78). Its remains are now in the Museum of Trinity College, Dublin. Between the 6th and 26th of January, 1859, a White's Thrush was several times observed at Welford, near Stratford-on-Avon, and, having been killed, is now in the collection of Mr. Robert Tomes of that place, who, unlike most ornithologists, was not content with merely announcing the bare fact, but in doing so (Ibis, 1859, p. 379) contributed some excellent remarks on the structure and affinities of the species, while he has further laid the present Editor under an obligation by submitting the specimen to him for examination. In the spring of 1867 a fourth example was shot at Ballymahon, county Longford, as recorded (Zool. s.s. p. 2060) by Mr. H. Blake-Knox, who examined it at the birdstuffer's. Early in January, 1870, one was shot at Hestercombe near Taunton, and obtained by Mr. Cecil Smith (Zool. s.s. p. 2018) who has kindly forwarded it for the use of this work; and, almost exactly a year later, on the 6th of January *, 1871, the occurrence, at Langsford, near the Mendip Hills, of a second Somersetshire specimen was recorded (Zool. s.s. 2607) by the same gentleman—this last being now in the possession of Mr. Byne, of Miligen Hall near Taunton, who has sent its photograph to the Editor. In the spring of 1870 Mr. Atkinson believes that he saw a bird of this species at Danby in Cleveland, and as he states (Zool. s.s. p. 2142) that he watched it through a glass at the distance of ten yards, this well-known observer is hardly likely to have been mistaken. But be that as it may, a male, being the seventh British-killed specimen, was obtained at Hickling in Norfolk, on the 10th of October, 1871, as recorded by Mr. Gunn (Zool. s.s. p. 2848), and is

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* Zoographia Rosso-Asiatica, i. p. 449 (1811).

† Eyton, Rarer Brit. Birds, p. 92 (1836).

‡ Syst. Nat. Ed. 12, i. p. 291 (1766).

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* On the preceding day a "strange Thrush" answering to the description of this species was seen at Cobham, in Kent, by Lord Clifton (Zool. s.s. p. 2845).

now the property of Mr. Sotherton Micklethwait, who also has kindly submitted it to the Editor's inspection. Lastly, on the 31st of January, 1872, another example was taken alive in Castle Eden Dene, Durham, having been shot at by Mr. Burdon of that place a fortnight before, when the feathers of one wing (some of which that gentleman has been so good as to send to the Editor) were cut away, and the bird thus rendered incapable of flight. It survived its capture about three weeks.

Elsewhere in Europe there is reason to believe that this species has been killed nearly twenty times, though the records in some cases mention it under various names. In Belgium, according to M. C. F. Dubois (Journ. für Orn. 1856, pp. 237 and 505), it seems to have been met with in four or five instances:—at Dion-le-Mont in October, 1842 (the specimen being in Baron de Selys-Longchamps's fine collection), at Namur, and at Jemappes and Louvaine in October, 1855. The Museum at Metz has long held an example taken in the woods of Rezonville, in September, 1788, and many years afterwards described by Holandre as a new species under the name of *Turdus aureus* (Annuaire de Verronnais, pour l'an 1825, p. 310). MM. Jaubert and Barthélemy-Lapommeraye figure one killed near Marseilles in October, 1840. A female occurred in the Tyrol in 1861, according to Dr. Althammer (Rev. de Zool. 1861, p. 553). One is said (Isis, 1845, p. 564) to have been obtained in the Vienna market, and Herr von Pelzeln mentions, though under the name of a perfectly distinct species (*Turdus dauma*), one killed at Aspang in Austria in 1847. Two or three have occurred on Heligoland, one of which, according to Boie (Isis, 1835, p. 251) was killed in September, 1834; and prior to 1838, at least two near Hamburg, one of which, mentioned by Mr. Gould in his 'Birds of Europe,' is still in the possession of Mr. Baker, of Hardwick Court, Gloucester. In 1849 Herr E. F. von Homeyer announced (Rhea, ii. p. 145) that a specimen taken at Elbing in Prussia was contained in the Museum at Königsberg; while in 1840 Prof. Sundevall communicated to the Royal Academy of

Sciences at Stockholm that a male had been killed in Jemtland, one of the Swedish provinces, in November, 1837.

The description of this species was first given by Pallas, in his great work on the zoology of Russia, from the papers of J. G. Gmelin, who met with it at Krasnojark on the Jenisei, and noticed the peculiar feature of its possessing fourteen tail-feathers. Steller also found it on the eastern shores of Lake Baikal. Herr Radde seems to be the only other Siberian traveller who has mentioned it. On the Tarei-noor he shot three, two males and a female, apparently making their journey northward, in the spring of the year. Mr. Swinhoe states that it is found in China generally, and also in Formosa, while several specimens have been sent from Japan. Mr. Gould has received an example from Manilla, which, if obtained there, indicates the most southern point yet known to be reached by this bird.

Of the habits of this species but little is known. Temminck, from information supplied to him by the Dutch travellers in Japan, states that it inhabits high mountains. Mr. Swinhoe says (Proc. Zool. Soc. 1863, p. 279) that at Amoy in China, where it is an extremely rare visitant, it only appears in spring, when the banyan-berries are ripe. Mr. Tomes, in his very able paper, before mentioned, says that its digestive organs differ somewhat from those of other British Thrushes in being strictly adapted to a diet of insects, and it is worthy of remark that several of the examples which have been obtained in Europe were flushed from the ground, where among dead leaves they seem to have been searching for insect-food. This circumstance, coupled with their mottled plumage and their large wings, has in some instances led to their having been mistaken at the time for Woodcocks. The form of the wing and the development of the breast-bone in White's Thrush indicate, as Mr. Tomes has observed, a bird possessing great powers of flight and essentially migratory habits. Nothing is known of its mode of nidification or the colour of its eggs. Its flight is said to be very undulating, and its call-note like that of other Thrushes.

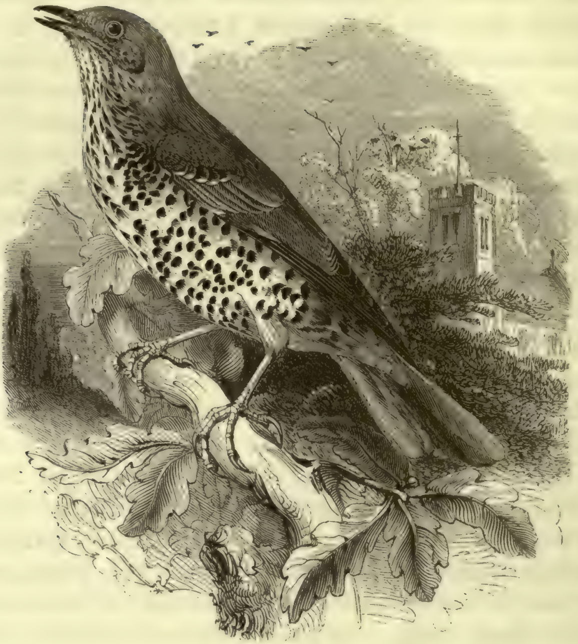
Very much confusion has long prevailed with respect to this bird and several others more or less nearly approaching it in appearance, which by some ornithologists are regarded as forming a genus distinct from *Turdus* and called *Oreocincla,* so that a few words on this subject may not be amiss. It has already been said that White's Thrush, *Turdus varius,* Pallas, was by its first describer noticed to be possessed of fourteen tail-feathers—a number very unusual among birds of its Order. But the same peculiarity is shared by a second species closely resembling it at first sight. This is from Java, and was described by Horsfield in a paper read before the Linnean Society in 1820 (Trans. Linn. Soc. xiii. p. 149) under the title of *T. varius,* which name being preoccupied since 1811 by Pallas for the northern bird, Bonaparte and Prof. Sundevall have respectively and simultaneously proposed to be altered to *Oreocincla horsfieldi* (Rev. de Zool. May, 1857, p. 205) and *O. malayana* (Journ. für Orn. May, 1857, p. 161). But the Javan species can unfailingly be distinguished from *T. varius,* Pallas, by the rounded form of the wing, in which the second primary is considerably shorter than the sixth, and all the quill-feathers are much broader, while *T. varius,* Pallas, has the feathers narrower and the second primary considerably longer than the sixth. All the other allied species, like ordinary Thrushes, have but twelve tail-feathers, and this serves at once to distinguish them, though several of them have mottled backs, and two at least may easily be confounded. These are the Indian *T. dauma* and the South-Australian *T. lunulatus,* but the relative length of the primaries again furnishes the means of separating them. In the former the second quill is some bit longer than the sixth, while in the latter the second is slightly but decidedly shorter than the sixth. Another difference may be also found in the colour of the tail: in *T. dauma* the second, third and fourth pairs of rectrices (particularly the third) are much darker than the two middle pairs; while in *T. lunulatus* the second, third and fourth pairs are not very much darker than the two middle pairs, and are more or less obsoletely barred. In Northern Australia, another species occurs—the recently-described *T. iodurus* (Gould), which differs from *T. lunulatus* by its second primary not being shorter than its sixth, as well as by the prevailing tint of its back and tail being more rufous. The distinguishing characters of these species are here expressly shewn, because examples of one or the other of them are constantly palmed off by dealers as specimens of the true White's Thrush, and the examination and comparison of a very large series—consisting of those contained in the British and Cambridge Museums, and the collections of Messrs. Dresser, Sharpe, Swinhoe and Gould, Canon Tristram, and Lord Walden, which have been most kindly placed at the Editor's service, have enabled him to point out the specific differences as above given with some degree of assurance. Of the other allied species it is unnecessary to say anything here, as they are not likely to be taken even by a casual observer for *T. varius*.

It will be observed that no notice has here been taken of a Thrush mentioned in former editions of this work as being the property of Mr. Bigge, then of Hampton Court, but now of Debden Hall, Essex; who, about the year 1825, bought it of a bird-stuffer at Southampton. This specimen was said to have been shot in the New Forest by one of the keepers. It was unfortunately sold in 1849 with the rest of Mr. Bigge's collection, and that gentleman, though he has most obligingly made every enquiry, has failed to trace it. It is evident that it was not a White's Thrush, for, as described in former editions of this work, it had the second primary as long as the sixth, a character which equally precludes it, in the Editor's belief, from having been an example of Horsfield's Thrush; while he has been very kindly informed by its former possessor that, though he had no reason to doubt the bird-stuffer's story, the specimen, when shewn to Mr. Gould, who still remembers the fact, was found by him to have its head stuffed with wool, as was often the case with bird-skins prepared in Australia. On the whole, therefore, it seems not improbable that though no fraud may have been intended, the specimen had been brought from that country, and is most prudently to be omitted from further consideration. It must, however, be remarked, that the Museum at Lund, according to Prof. Nilsson, contains an example of the Australian species said to have been killed in Funen, but as it is known to have passed through a dealer's hands in Hamburg, there is here also good reason to suspect a mistake.

The bill of White's Thrush is dark brown, except the base of the lower mandible, which is pale yellow-brown; the space between the bill and the eye pale wood-brown; the irides hazel: the feathers on the upper part of the head and neck yellow-brown, tipped with black; those of the back, scapulars, and the upper tail-coverts, darker brown, with a crescentic tip of black, the shaft of each feather yellow: the smaller wing-coverts have broad, pale yellow tips, the webs black, the shafts yellow-brown; the greater wing-coverts dark brown with light yellow-brown tips, together forming two obliquely descending bars; the feathers of the spurious wing are light yellow-brown, tipped with black, forming an ascending oblique bar; the wing-feathers pale brown on the outer web, brownish-black on the inner web, with dark-brown tips, the shafts black: the four middle tail-feathers uniform pale brown: the remaining ten darker in the webs, but lighter at the ends, and of these the two outer pairs are the lightest. The chin and throat are white; from the lower edge of the under mandible descends a narrow dark streak; the neck, breast, and all the lower surface, white, tinged on the breast and flanks with yellow-brown, all the feathers having a black crescent-shaped tip; before the wing on each side, the brown colour of the back extends a little forward toward the breast; anterior lower wing-coverts white at the base and black at the tip; lower tail-coverts white; tail beneath greyish-brown, the feathers with white shafts; legs and toes pale brown, the claws rather lighter.

Lord Malmesbury's bird measures twelve inches and a half, the wing from the carpal joint to the end of the longest primary, six inches and three eighths; the second and fourth primaries equal in length; the third the longest in the wing.

PASSERES. *TURDIDÆ.*



TURDUS VISCIVORUS, Linnæus*.

THE MISTLETOE-THRUSH.

Turdus viscivorus.

THE MISTLETOE-THRUSH is one of the largest species of the genus, and, though not so numerous anywhere as the Song-Thrush and Blackbird, is yet nowadays very generally diffused, as the evidence to be hereafter quoted will shew. It is rather a shy bird, frequenting small woods, and the high trees in hedges bounding large meadows; but during the breeding-season it becomes bold and quarrelsome, driving away larger birds from its haunts, so that in Wales, according to Pennant, it has acquired the name of *Pen y llwyn*, or master of the coppice. Though as a species resident in this country all the year, many certainly migrate for the winter. Of those which remain the males begin to sing very early in the season, often in January, and if the weather be mild, sometimes in December. The strain, which is something like that of the Blackbird, but not so good in quality of tone, is repeated many times in succession, and generally from the top of some lofty tree; but is said to be occasionally uttered on the wing; and, from the song being frequently given almost regardless of wind, rain and even snow, the name of Storm-cock is a well-known appellation of the Mistletoe-Thrush. It is also called the Holm-Thrush, doubtless from its feeding greedily on the berries of the Holm, as the Holly was formerly often called.*

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* Syst. Nat. Ed. 12, i. p. 291 (1766).

The Mistletoe-Thrush is an early breeder, beginning to build in March, and fixing its nest in or on the fork of a branch of a tree, especially of an oak, beech or elm, covered with lichens. The nest is composed outwardly of lichen, moss, dry grass and coarse stems of other plants, coated inwardly with a layer of mud, which again is covered with a lining of fine grasses, but the bird will make use of various odd materials—bits of rag, paper and matting or shavings. The nest is sometimes artfully concealed by the lichens which deck its exterior, assimilating it to those which grow on the branch which bears it; but, as a rule, it is generally placed in conspicuous and exposed situations, so as to be very easily discovered by any passer-by. The eggs measure from 1·39 to 1·04 by from ·9 to ·81 in., and are four or five in number, of a greenish-white, blotched, spotted or suffused with red-brown and dull reddish-lilac; sometimes the ground-colour is reddish-white, with dark markings. Two broods are produced in the year, and during autumn and winter the birds keep in small parties, probably composed of members of the same family.

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* Thus, among much other evidence that might be cited, Chaucer, in the 'Parlement of Foules' has (st. 26) "The boxtre pipere, holm to whippis lasch," where, according to Mr. Furnivall, five of the texts read "holm" or "holme," three "holin" or "holyn," and one "holye." In the 'Promptorium Parvulorum' written about 1440, and edited for the Camden Society by Mr. Way, "Holme" and "Holy" are given as synonymous (p. 244). Spenser also, in his 'Virgil's Gnat,' has (st. 27) "the black Holme," an epithet pointing to a tree with dark foliage. On the introduction into this country, about 1581, of the evergreen oak (*Quercus ilex*) the name Holm-oak was applied to it as the oak resembling the holly (Loudon, Arboretum, iii. p. 1902); and in like manner Holm-berries as a name for those of the Butcher's broom (*Ruscus aculeatus*) is probably of the same origin, the dark, shining and sharp-pointed leaves of the two plants (to say nothing of their red berries) suggesting the likeness. The Editor is indebted to his two learned friends, Mr. W. W. Skeat and Mr. J. Rawson Lumby, for much of the information just given.

Authors have accused the Mistletoe-Thrush of killing the young of other birds; but it seems to act differently in France. There, according to M. Vian (Rev. de Zool. 1865, p. 132), wherever this Thrush builds its nest a Chaffinch will do the like, either on the same tree or one close by, and he explains the object of this strange association to be the mutual protection of each from the attack of Pies; for, on the approach of one of those pillagers, the Chaffinch raises a cry of alarm, whereupon the Thrush darts like an arrow on the invader and drives him away.

The flight of the Mistletoe-Thrush is rapid, but performed by a succession of jerks. Its food consists of worms, slugs and snails; some fruit in the season; and, when they can be found, berries of all sorts, including those of the mistletoe,* whence it derives its most common name.

The Mistletoe-Thrush is now well known in all the counties of England and Wales, though there is good evidence that an hundred years ago it did not occur in several parts of the country, particularly towards the north.* The like has been observed in Ireland and Scotland. In the first, Thompson states that it is a resident species pretty generally distributed over wooded districts, adding that the "remarkable feature in the history of this bird, is its absence from the country until of late years, and its rapid increase from the period of its first appearance," which is said to have been in the year 1800 †, at Redhall in Antrim. Soon after it bred in the county of Down, and in 1807 in Louth. In 1832 it was common and resident in the north-west of Donegal, and in 1839 it had appeared and was increasing in Galway, while it had also become common in Tipperary. One killed in Cork in 1818 was considered an extraordinary rarity, and in Kerry the species was first seen in 1827. Similar evidence is given from other counties, but enough has been cited to shew that this species has not only been an invader of but a successful settler in Ireland. As to Scotland, Mr. R. Gray states that there has been a gradual increase in its numbers throughout the country during the last thirty years. "So recently", he adds, "as 1830, it was rather an unusual circumstance to find a Missel Thrush breeding in any locality north of the Tweed. Now however it is very common almost everywhere, extending, as I am informed by Mr. Brown, to the counties of Sutherland, Ross and Caithness." In both kingdoms it is said that at first its breeding-haunts were confined to the more sheltered spots, but that it gradually spread from them over the plantations generally. Messrs. Baikie and Heddle mention that this species occurs in Orkney after strong easterly gales, but it does not appear to have been yet obtained in Shetland.

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* This fact was known to Aristotle, as his name (ἰξοβόρος) for the bird shews. Dr. Prior, in his 'Popular Names of British Plants' (p. 153) gives the derivation of Mistletoe, or its Old-English equivalent, *Mistiltan*, "from *mistl*, different, and *tan*, twig, being so unlike the tree it grows upon"; but the two learned friends who supplied the substance of the last note think *mistl* to be an unusual contraction of the unusual form *mistlíc*, which is a corruption of *mislíc* (unlike), while the Doctor's derivation, taken from Bosworth, is contradicted by the use of the *t* in the Old High-German *Mistil* (mistletoe). This last, clearly the origin of the first part of the plant's name, is probably from *Mist*, meaning dirt or obscurity. The idea of dirt, from the viscosity of the berries, is most likely that which is here attached to the word; but it may refer to *Mist*, one of the goddesses of fate in the Northern mythology, and in this sense Mistletoe would signify "twig of fate," in connection with which there is a story in Snorri's 'Edda' (chap. 49). *Tan*, it may be observed, still survives in English as the "tine" of a fork or of a stag's antler. Anyhow it would seem that the proper name of this bird should be written in full "Mistletoe-Thrush," and not, as commonly, "Missel-Thrush."

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* For instance it has been said that when at the end of the last century Bewick wished to figure this species among his inimitable woodcuts, he, living at Newcastle-on-Tyne, had some difficulty in procuring a specimen. If the story be true, the species must soon after have appeared there, for the Editor is informed by Mr. John Hancock that he knew of a nest in the town fifty years ago.

† Or even not until 1808 (B. Ireld. iii. p. 436).

On the continent of Europe the Mistletoe-Thrush has a very high northern range, breeding in Norway as far as Bodö, where the Messrs. Godman found it, and Prof. Sundevall obtained a single example at Alten, nearly in lat. 70° N. Wolley's collectors several times brought its nest and eggs from lat. 68° N. on the frontiers of Sweden and Finland, and in the country last mentioned, though nowhere numerous, it is said to be generally distributed. How much further it extends to the north-eastward is not known; but Lehmann records it from Orenburg, and in southern Russia Herr H. Göbel states that it is a bird of regular double passage, as is also the case in the Crimea, though Von Nordmann adds that some winter at Odessa. It is common in Turkey and breeds there; the birds crossing the Bosphorus to Asia Minor in October. Strickland observed it at Smyrna in winter. It is not included in De Filippi's list of Persian birds, but is well known in the north-western Himalayas. The Indian bird, however, is by some deemed a distinct species, and has been named *Turdus hodgsoni*, but Messrs. Sharpe and Dresser, in their elaborate account of the Mistletoe-Thrush, declare, after the comparison of a large number of specimens, that the asserted difference cannot be maintained. It frequents all the central and southern countries of Europe, and was observed by Mr. Drake to be very common in Morocco, while Mr. Salvin noticed it on the Tunisian frontier of Algeria.

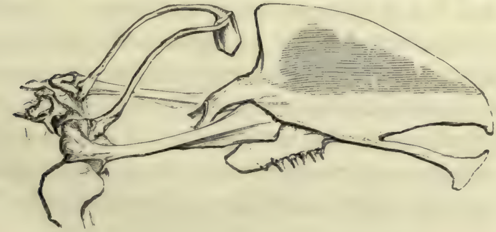
The bill is dark brown; the under mandible pale yellow at the base; the irides hazel: the top of the head, and almost all the upper parts, nearly uniform clove-brown: wings and wing-coverts umber-brown, the latter broadly edged with wood-brown, the wing-feathers with a narrow edge of the same colour; the slightly forked tail above umber-brown, the broad inner web of each outer quill with a patch of dull white, and the second quill on each side with a smaller patch at the tip: all the lower parts white, tinged with yellow, and covered with numerous black spots; those in front of the neck triangular in shape, with one angle pointing upwards; those on the breast, belly and sides rounder; wings and tail beneath grey: tarsi and toes pale brown; claws dark brown. Males and females differ little in size or plumage.

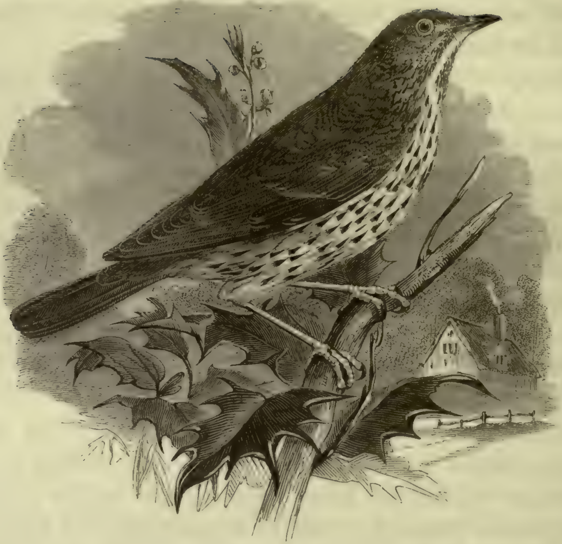
The whole length is about eleven inches: the wing from the carpal joint, five inches and three-quarters; the first primary one inch; the second the same length as the fifth; the third and fourth equal, and the longest.

The young, when about to leave the nest, exhibits a greater variety of markings than the adult; the feathers on the head, neck, upper part of the back, and smaller wing-coverts, have a median stripe of buff, with a black spot at the tip; those of the greater coverts and tertials have broad external edges of rich buff: the chin is white; the other lower parts tinged with fawn-colour and marked with black spots.

As in all the truly British Thrushes, pale or white varieties of this species have been met with; and, indeed examples exhibiting partial or total albinism are so far from rare among birds generally, that it is proposed not to mention them in the course of this work unless in such cases as possess some special interest. Though much has been written on the subject, little appears to be known as to the cause of these variations. It has been supposed, and probably with truth, that they are usually due at first to constitutional weakness, which experience shews to be often hereditary; but it must be remarked that the tendency to albinism is much more frequent in some groups than in others.

The vignette represents the breast-bone of the Blackbird illustrating its form in the genus *Turdus*.





TURDUS MUSICUS, Linnæus*.

THE SONG-THRUSH.

Turdus musicus.

THE SONG-THRUSH, Throstle or Mavis, is a well-known and general favourite, chiefly from an opinion that it is the best of our larger singing-birds, possessing to a greater extent than others a combination of the three requisites—power, quality of tone, and variety. Its song is also continued through a large portion of the year, beginning with the first mild weather, lasting until the commencement of the moult, and being often resumed in autumn. In addition to this great recommendation to favour, the bird is, except for a few weeks, not only inoffensive in habit, but most beneficial to the horticulturist, elegant in shape, sprightly in action, and engaging by its confidence. It is not, as we find it in this country, so gregarious as some other species of the genus, but is widely distributed throughout the British

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* Syst. Nat. Ed. 12, i. p. 292 (1766).

Islands, even in places of the most diverse kind, from the storm-swept cliffs of St. Kilda to the smiling meadows, woods and gardens of southern England. It feeds on snails (the shells of which it breaks dexterously against a stone, as, in the Hebrides, it also does those of the whelk), insects, worms and, according to season, on fruit and various berries. In the vine-countries of Europe, it feasts luxuriously during autumn on ripe grapes; and in many parts of the continent is in great request for the table at that time, from the excellent condition and flavour which abundance of this food imparts to its flesh. Prudent gardeners, who surround their fruit with nets, have nothing to fear from the Song-Thrush, and much for which to be thankful to it.

White of Selborne considered it a rule, that whenever there was incubation, there was music; and the early spring-song of this Thrush truly indicates the early breeder. The nest is begun in March, and is frequently placed in the middle of a thick and tall bush or shrub, sometimes in a holly or fir, while occasionally this bird has been known to build in an outhouse, and even, though rarely, on the ground. The nest is formed externally of sticks, roots and moss, generally mixed with some lumps of clay; the inside is smooth and compact, being lined with a thin coating of rotten wood, and, as is said, sometimes of cow-dung, so prepared with saliva, so equally spread and cemented, as to be, for a time, watertight; and such a quantity of rain-water has been found in an exposed Song-Thrush's nest, as to induce the belief that the nest had been deserted as untenable. The eggs are from four to six in number, of a beautiful shining, light, or sometimes deep, greenish-blue, with black spots, blotches or streaks, chiefly at the larger end—but sometimes without markings; while, rarely but occasionally, the markings are of a dark red, and nests have been known with the eggs of a pure white ground-colour and a few rusty spots. The eggs usually measure from 1·14 to ·96 by from ·81 to ·74 in., but an exceptionally large egg will measure 1·92 by ·92, and an exceptionally small one ·69 by ·58 in. In its style of nest-building and the normal colouring of its eggs the Song-Thrush seems to stand almost alone among birds. The cock takes his share in incubating; but does not sit so long as the hen, though he often feeds her while she is upon the nest. The young are hatched in about thirteen days, and the parents carry off the shells, while they have also been observed to swallow the fæces of their offspring. Two broods at least are reared in the season.

Towards the end of summer our native Thrushes receive a considerable accession in number from the birds that arrive from the north; but in most localities these strangers depart after a short sojourn, and are accompanied by the great bulk of the homebred birds. Sufficient of the latter, however, remain throughout the year to give rise to the general belief that in Britain at least, the Song-Thrush is not a migratory species, though its seasonal movements have long been noticed; and in some parts of this island it may be stated as a fact that not a single bird can be seen from the end of November to the end of January or beginning of February.

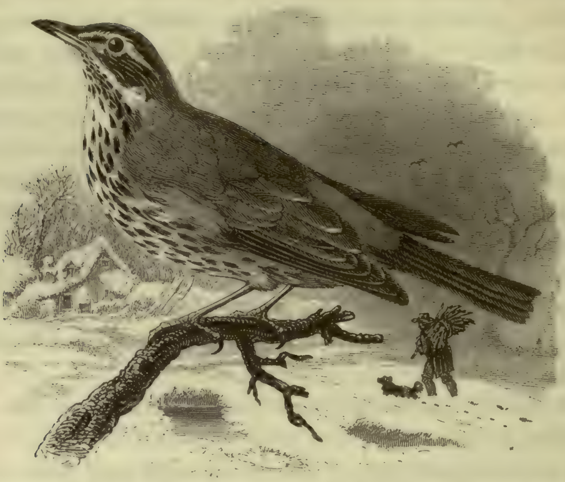
The Song-Thrush is universally spread over the British Islands, with the exception of the Shetlands; but it is worthy of remark that examples from the Hebrides, where the species is very numerous, are smaller and darker in colour than those from the mainland. It has not been found further to the north-west, but it has a high northern range in Norway and Sweden, breeding at least as far as in lat. 68° N. Thence it may be traced across the Russian empire to the shores of the Pacific, for Dr. von Middendorff met with it breeding at Udskoi-Ostrog, while Mr. Gould has a specimen from Foochow in China, which according to Mr. Swinhoe does not differ from European examples so much as they differ among themselves. Its distribution in Asia is as yet indeterminable, but it has not hitherto been recorded from India or Persia; it occurs, however, in Armenia, while it is a winter visitor to Palestine and Arabia, extending its flight at that season also to Egypt and Nubia. It is very common in autumn in Algeria and the Barbary coast, and even strays to Madeira. Within the limits thus indicated it is everywhere a more or less common species; but in the northern countries of Europe, it is known entirely as a summer- just as in the south it is chiefly a winter-visitant, and the birds which remain to breed in the latter seek the higher elevations. Indeed its migrant habits, as already hinted, attract great attention almost all over the continent, and the beginning of the *Drosselzug* and *chasse aux Grives* is regarded in many places nearly as the 12th of August and the 1st of September are with us. Mr. Gould, in his 'Birds of Great Britain,' has given a very good account, furnished by Mr. Box, of the *tenderie*, or mode of snaring Thrushes, practised in the Ardennes, and the subject is treated in great detail by the late Pastor Brehm in his last work (Vogelfang, ii. pp. 162–200).

The bill is umber-brown, except the base of the lower mandible, which is a paler yellow-brown; the irides hazel-brown; the upper part of the head, neck and back, wings, rump and tail above, dark hair-brown; the outer edges of the primaries and wing-coverts wood-brown; from the bill to the eye a dark-brown streak, with a lighter brown streak over it; the eyelids light brown; the ear-coverts mottled with two shades of brown, with darker tips: the chin white; the throat, sides of the neck, breast and flanks, ochreous-yellow, spotted with dark brown; belly, vent and tail-coverts, nearly white, the first with a few well-defined spots of dark brown; tail reddish-brown beneath; legs and toes pale brown, claws darker brown.

The whole length rather less than nine inches. The wing, from the carpal joint to the end of the longest primary, four inches and five-eighths: the second quill rather longer than the fifth; the third the longest in the wing, but the fourth nearly equals it.

The female is smaller than the male; the head and upper part of the neck are lighter; the white of the breast not so pure, with less of the yellow colour; the breast-spots larger, and not so well defined.

The back and scapulars in young birds have a pale yellowish spot in the middle of each feather, and the smaller wing-coverts streaked with pale brown.



Turdus iliacus, Linnæus*.

THE REDWING.

Turdus iliacus.

The Redwing is a regular winter-visitor to the British Islands, which comes to us in flocks from Iceland and the nothern parts of the European continent, frequently arriving by the middle or before the end of October. While in this country, it chiefly affects enclosures and parks that are ornamented with clumps of trees; and, like the Song-Thrush, which it much resembles in external appearance, it seeks its subsistence in mild and open weather in pasture-lands and moist meadows, feeding principally on worms, snails, slugs and insects. It is much less inclined to eat berries than most of the other species of this genus; and should its usual resources be closed by long-continued frost and snow, the Redwing is the first among birds to suffer, and during some severe seasons, such as 1799, 1814, 1822, and the winters of 1838-39 and 1860–61, hundreds have been found almost starved, alike unable to prosecute their journey further south to more genial climates, or to bear the rigour of this; though others, perhaps better prepared for travel or possessing a stronger migratory instinct, extend their flight, as will be presently seen, to very distant countries.

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* Syst. Nat. Ed. 12, i. p. 292 (1766).

After the winter is over, the Redwing returns to us and remains till the gradual advance of the season induces it to resume its journey northward. Some are almost every year seen in the British Islands so late as the middle of May; and White of Selborne remarks, that in the very cold and backward season of 1740 they lingered in Hampshire till June. Mr. Eyton has noticed a few remaining all the summer in Shropshire, and the same is said to have been observed in Aberdeenshire. Cases, though to be regarded with doubt, have also been recorded of its breeding in this island: of these perhaps the best authenticated is that mentioned by Dr. Saxby, who says (Zool. p. 7427) that in May, 1855, at Maintwrog in North Wales, he found a Redwing's nest with four eggs, upon which he repeatedly saw the bird; while Fleming states that Bullock, in a letter "dated 23rd April 1819, mentioned the circumstance of its breeding in Harris, where he had observed it in the preceding summer."

In Sweden and Norway this bird breeds in the more elevated parts northward from lat. 57° N., its summer-haunts being bounded below by the upper zone of the fir-forests and extending to the limit of the birch trees. Wolley observed of it in Lapland, as he informed Mr. Hewitson, that it "makes its nest near the ground, in an open part of the wood, generally in the outskirts, on a stump, a log, or the roots of a fallen tree, sometimes amongst a cluster of young stems of the birch, usually quite exposed, so as almost to seem as if placed so purposely, the walls often supported only by their foundation. The first or coarse part of their nest is made for the most part of dried bents, sometimes with fine twigs and moss; this is lined with a layer of dirt, and then is added a thick bed of fine grass of the previous year, compactly woven together, which completes the structure. Outside is often a good deal of the kind of lichen called rein-deer moss, and one nest particularly, which I have preserved, is entirely covered with it: when it was fresh, and the fine ramifications of the lichen unbroken, it had a most beautiful appearance." The first eggs (a second brood being frequently produced) from four to six in number, are laid towards the end of May, and much resemble those of the Fieldfare, to be presently described, but usually have a darker ground-colour and the reddish-brown markings fainter, finer and more regularly diffused over the whole surface. Occasionally the ground is of a pale cream-colour, but almost hidden by light-red streaks. They measure from 1·1 to ·92 by from ·83 to ·69 in. When the young are hatched, the parents fly suddenly towards an intruder, with an angry note, snapping their bill and then wheeling out of sight.

Linnæus, in the account of his tour in Lapland, terms the Redwing's song "delightful", and adds that "Its lofty and varied notes rival those of the Nightingale herself." Other travellers have accorded the same high praise, which to some, and among them the present Editor, seems extravagant. His opinion entirely coincides with that of one, in whose company he has often heard it. Wolley thus writes of it:—"A string of three or four notes—*tut-tut-tut*—in a regularly descending scale, and then a little inward twittering or warbling, the former at about the ordinary pitch of the voice of the Song-Thrush (whose music, by the way, is infinitely superior), but the last part so faint and feeble as scarcely to amount to a whisper, and only to be heard at a short distance." The constant repetition of this strain, though a striking woodland-sound, becomes tiresome, and in a land which re-echoes the melody of the Song-Thrush and Bluethroat, the name of "Nightingale," applied to the Redwing, seems ironical. The inward twittering, which forms the final part of the song, may often be heard in this country in spring, and has been well likened to the combination of sounds which may be heard from a flock of Linnets.

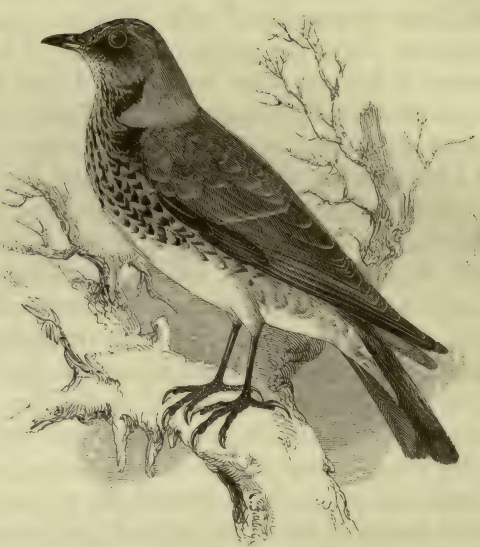
During summer the Redwing finds a home in Iceland also, breeding there and occasionally straying to Greenland, while on its passage to and from the former it occurs in the Færoes.

Its range in Scandinavia has already been mentioned, and thence it extends across the Russian Empire, especially frequenting places where the juniper grows, to Irkutsk, eastward of which it has not been recorded. It has been found in the North-western Himalayas, and in Kohat it is said to be a regular winter-visitant. Ménétries noticed it in the forests of Lenkoran on the Caspian Sea, and Strickland at Smyrna. It is said to be common in Greece and its islands, but seems not to cross the eastern end of the Mediterranean. In Sicily it is somewhat rare, but it occasionally appears in Malta, and, according to Loche, it is common in autumn in Algeria. It has also been met with in Madeira, while in Portugal and Spain it is common at certain seasons, as indeed may be said of it in every country in Europe. In North Germany it is very abundant in autumn, and the numbers captured far exceed those of the Song-Thrush, and there it is occasionally but rarely found throughout the year.

The bill is brownish-black, the base of the lower mandible pale yellow-brown; the top of the head, neck, back, rump and tail uniform clove-brown; wing-feathers darker, but with lighter-coloured external edges: lores and ear-coverts, clove-brown; over the eye a broad whitish streak: the irides hazel: chin, throat, belly, vent and lower tail-coverts, dull white; sides of the neck, upper part of the breast, and flanks, dull-white, tinged with wood-brown and streaked with clove-brown; quills ash-grey beneath; sides of the body, lower wing-coverts and axillaries, bright reddish-orange, whence the bird's common name: legs pale brown; toes and claws darker brown.

The whole length is about eight inches and three-quarters; wing from the carpal joint to the end of the longest primary four inches and three-eighths: the second feather equal to the fifth; the third and fourth also equal, and the longest.

The female is less bright than the male. The young in its first plumage generally resembles the adult, but the feathers of the mantle and upper wing-coverts are marked with a subterminal lozenge-shaped spot of yellowish-white tinged with rufous on the latter.



Turdus pilaris, Linnæus.*

THE FIELDFARE.

Turdus pilaris.

The Fieldfare is a well-known migratory Thrush coming to us from the north-east, and usually arriving towards the end of October, but sometimes so early as September; its appearance partly depending on the temperature of the season. It is generally seen in large flocks, which, if the weather continues open and mild, spread over the fields, and especially pasture-lands, in search of worms, slugs and the larvæ of insects; but on the occurrence of snow or frost, the birds take to the hedges, and feed on haws and various berries †, or, failing them, even on turnips. At this time they are shy and difficult to approach: the whole flock, taking wing and keeping together, settle by scores on some distant tree, whence, if again disturbed, they wheel off in a body as before. Should the weather become very severe, they leave us to go further south, and are again seen on their return; then frequenting, as before, the open fields, and often remaining until the middle of May, when they depart for their northern breeding-places. White of Selborne says that in the cold spring of 1740 they lingered till the beginning of June; and Mr. J. H. Ellis states (Zool. p. 9248) that a bird of this species was killed in Leicestershire July 29th, 1864. Some supposed instances of the Fieldfare breeding in this country have been recorded; but not one that seems to be free from reasonable doubt. Mr. Hewitson, who was the first Englishman to publish from his own observation an account of the Fieldfare's nidification as noticed in Norway, during the summer of 1833, by himself and his fellow-travellers, Mr. John Hancock and Mr. Benjamin Johnson, thus describes its habits, saying that, after a long ramble through thick woods, "our attention was attracted by the harsh cries of several birds, which we at first supposed must be Shrikes, but which afterwards proved to be Fieldfares, anxiously watching over their newly-established dwellings, we were soon delighted by the discovery of several of their nests, and were surprised to find them (so contrary to the habits of other species of the genus *Turdus* with which we are acquainted) breeding in society. Their nests were at various heights from the ground, from four to thirty, or forty feet or upwards, mixed with old ones of the preceding year; they were, for the most part, placed against the trunk of the spruce fir, some were, however, at a considerable distance from it, upon the upper surface and towards the smaller end of the thicker branches; they resemble most nearly those of the Ring Ouzel; the outside is composed of sticks, and coarse grass and weeds gathered wet, matted together with a small quantity of clay, and lined with a thick bed of fine dry grass; none of them yet contained more than three eggs, although we afterwards found that five was more commonly the number than four, and that even six was very frequent." Mr. Hewitson's information has since been fully corroborated by many observers; but, though the species commonly breeds in society, and two hundred nests or more have been seen within a very small space, it is not invariably gregarious, single nests being not rarely discovered, while in treeless districts the birds will build on the ground, or even occupy an unfrequented hut. The eggs are light bluish-green, varying in shade, and mottled over with small blotches or streaks of dark or light red-brown; they usually measure from 1·25 to 1·09 by from ·87 to ·73 in., and exceptionally small ones not more than ·85 by ·67 in. This bird breeds early, the eggs being often laid, even in Northern Lapland, towards the end of May; but has two broods in the season, and Mr. William Christy, who visited Norway in the summer of 1836, found (Entomol. Mag. iv. p. 476) a nest with eggs in it near Kaafjord, in West Finmark, so late as the 6th of August.

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* Syst. Nat. Ed. 12, i. p. 291 (1766).

† In Germany they are supposed to be extremely partial to the berries of the juniper, and hence receive their common name in that country.

The call-note of the Fieldfare is harsh, and its song is poor, though by some called soft and melodious. At night it usually frequents plantations; but unlike its congeners, it is sometimes known to roost on stubble-fields.

This bird is well known throughout the three kingdoms. It is said by Gliemann to have once occurred in Iceland, and it has been occasionally obtained in the Færoes, but it is one of the commonest species in all parts of continental Scandinavia; whence, a few birds only remaining in favoured spots, it generally migrates in autumn, journeying over all the southern countries of Europe, and though of rare occurrence in the Iberian peninsula, crossing the Mediterranean to Morocco and Algeria. Further eastward it has of late years been found to breed in lower latitudes, even in Bavaria, according to Pastor Jäckel, and possibly in the Alps. It is also found in most parts of the Russian Empire, its northern range being probably only limited by that of the forests; but it becomes less numerous in Oriental Siberia. As, however, it is pretty common in Cashmere in winter, it can scarcely be otherwise than proportionally abundant to the northward, and a single example is known to have been obtained in India, near Simla. Returning westward, it is found in winter in Turkestan, Palestine, Egypt and Nubia.

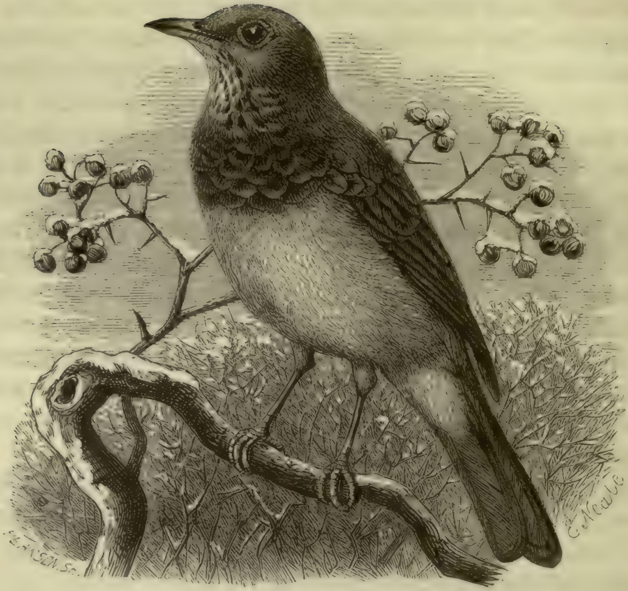
The tip of the bill is black, the base of the upper mandible dark brown, and that of the lower, pale yellow-brown, but in spring the whole becomes orange; the lores black: the irides hazel-brown: the upper part of the head ash-grey, spotted with dark brown, and a white line extends on each side from the nostril backward over the eye; the neck, ear-coverts, upper part of the back, rump and upper tail-coverts, ash-grey; the back, wings and wing-coverts, rich hazel-brown; greater wing-coverts edged with grey; primaries dark slate-grey, the outer edges and tips lighter, the shafts black; the slightly-forked tail nearly black above: chin and throat golden-amber, streaked with black; the breast reddish-brown, spotted with black; the belly, flanks and lower tail-coverts white—the two last spotted with greyish-brown and dark brown; lower wing-coverts white; quills dark slate-grey beneath: legs and toes very dark brown; claws black.

The whole length is fully ten inches: the wing from the carpal joint, five inches and five eighths; the second quill a little longer than the fifth; the third and fourth equal in length, and the longest in the wing.

The female has the bill darker; the head and back less pure in colour, and the legs paler.

The young has some resemblance to the adult, but wants the grey head and nape—those parts being of a dark brown, and the superciliary streak is buff; the mantle is of a deep wood-brown, the feathers bearing a median streak of ochre; and the flanks are tinged with orange.

PASSERES. *TURDIDÆ.*



TURDUS ATRIGULARIS, Temminck *.

THE BLACK-THROATED THRUSH.

ANOTHER eastern bird of well-marked migratory disposition and a northern range sufficiently high to send it occasionally on its autumnal passage wandering over western Europe, is the Black-throated Thrush above figured. Of this species a young male example, shot near Lewes, December 23rd, 1868, was on the same day taken to Mr. T. J. Monk of that town, and now forms part of his choice collection. Mr. Gould recorded the capture in 'The Ibis' for January, 1869 (p. 128), and a note to the same purpose from the owner of the specimen is printed in the 'Zoologist' for February (s.s. p. 1560), while the latter permitted Mr. Rowley, who himself saw the bird before it was skinned, to exhibit it at a meeting of the Zoological Society on the 14th of January (Proc. Zool. Soc. 1869, p. 4). Since also the species has long been known to occur in neighbouring countries, and may probably have been overlooked in our own,* its introduction to the present work, as to that of Mr. Gould, seems to be justifiable.

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* Man. d'Orn. Ed. 2, i. p. 169 (1820).

Of the habits of the Black-throated Thrush but little is known. Though it is presumably of Siberian origin, it does not seem to have come under the notice of Pallas or any of the naturalists who have followed more immediately in his track; whence it may be concluded that it does not in summer push so far to the northward as the countries investigated by them. Prof. Eversmann speaks of it in the 'Bulletin' of the Society of Naturalists of Moscow (xxiii. pt. 2, p. 571) as being not rare in the Southern Altai. Mr. Jerdon says it occurs "throughout the Himalayas, inhabiting the higher ranges in the interior, in summer, but descending to the lower ranges in winter; and it is even occasionally found in the plains of Lower Bengal." He adds, that it "keeps to the more open woods, at a level from 3,000 to 8,000 feet, and is occasionally seen on roads and pathways." Beavan was informed by the late Dr. Scott that it was tolerably abundant about Umballa in the cold weather, and Mr. Blyth has known it shot near Calcutta.

How often the Black-throated Thrush has occurred in Europe, or whether it is, as some assert, an actual inhabitant of the eastern parts of this quarter of the globe, cannot easily be said; for dire confusion has existed in the determination of several of the Asiatic Thrushes. Naumann states that it has been observed in the Caucasus, New Russia, the Carpathians, Dalmatia, Lower Italy and Sardinia, but gives no authority for the several assertions, some of which may be doubted. Hungary is added by Brehm and Silesia by Gloger. Herr von Pelzeln mentions two examples captured in Austria—one of them at Aspang in October, 1823, and now in the Vienna Museum. HH. Brandt, Jäckel and Von der Mühle say that a flock of fourteen, which they imagine must have been bred in the vicinity, were seen near Coburg at the end of October many years ago, and that two of them were taken. In the same district, the eldest Brehm also mentions (Journ. für Orn. 1862, p. 386) an old female killed October 10th, 1817. Dr. Borggreve quotes Prediger Böck for its occurrence at Danzig. Dr. Zander, in 1863, recorded two obtained in Mecklenburg—one at Penzlin many years before, the other at Wismar since, and it is said to have occurred in that duchy not unfrequently. Herr von Negelein (Naumannia, 1853, p. 56) mentions one taken in a snare near Oldenburg in 1847, and preserved in the Museum there, while a second was supposed to have been seen at Blankenburg. Dr. Kjærbölling says that a specimen in the Copenhagen Museum was shot in 1822 at Herlufmagle, in Denmark. Dr. Rudolf Blasius in 1862 announced to the German Ornithologists' Society that one had been snared at Göttingen. Herr von Kettner states that it occurs, though rarely, in the Black Forest, and Dr. Zander says the same of it in Würtemberg, where he was inclined to think it might breed. Pastor Jäckel mentions (Journ. für Orn. 1854, p. 491) one killed in Bavaria, at the end of June, 1853, and now in the Museum at Ratisbon. The elder Dubois speaks of one brought to market at Namur in October, 1844. In the autumn of 1848, according to De Lamotte (Rev. Zool. 1848, p. 318) one was killed at Abbeville; and MM. Jaubert and Barthélemy-Lapommeraye record the occurrence of two near Marseilles—one at St. Marcel in October, 1834, the other brought to market somewhat later. Finally, Prof. Savi long ago announced the capture of an adult near Turin in January, 1826, and now preserved in the Museum there.

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* A specimen in the Museum of the University of Edinburgh, mentioned by Macgillivray (Br. B. ii. p. 117) as a supposed hybrid between the Mistletoe-Thrush and the Blackbird, may possibly have been of this species. Prof. Duns has been good enough to search for the example, but it is not forthcoming.

The confusion, already mentioned, of the Black-throated with other Thrushes, has naturally led to some perplexity about its right name. Naumann for some time believed that a bird described in 1795 by Bechstein as *Turdus dubius* was the young of this Thrush, and, not liking so inapplicable an epithet for a very good species, proposed, in 1822, to call it *T. bechsteini.* This view was always contested by Brehm, who referred *T. dubius* to the bird commonly known as

T. naumanni; and finally, Naumann abandoned his belief and adopted the name *T. atrigularis,* which has a clear priority —though who should be considered its donor is not so certain. The German ornithologists generally ascribe the name to Natterer, who is said, and probably with truth, to have been the first to recognize and point out the characters of the species; but all seem to admit that he never published any notice of it, and thus his claim to acknowledgment must yield to that of Temminck, as previously quoted.

The foregoing figure and the following description of this species are taken from a Siberian specimen in the Museum of the University of Cambridge:—Above, almost uniform olive-grey, rather darker on the head, and having a slightly rufous tinge on the quills, the shafts of which are liver-brown. Lores and ear-coverts blackish; above the eye a short dirty-white streak. Chin dirty white; throat and chest dull brownish-black, the feathers edged and tipped with dirty white; breast and belly dull white with ill-defined dusky streaks; lower tail-coverts white varied by irregular and suffused streaks of reddish-brown; flanks dull hair-brown; axillaries and lower wing-coverts dull reddish-orange; quills beneath brownish-grey. Whole length about nine inches and a half: wing from the carpal joint five inches and three-eighths. Mr. Jerdon states that the bill is yellow, dusky at the tip; the orbits yellow; the legs honey-yellow-brown; the irides dark brown.

Col. Tytler (Ibis, 1869, p. 124) gives descriptions of five specimens—two adult and two young males, and one adult female, whence it would appear that the old males have an almost black gorget, while this part in the younger males and the female is more or less varied by dull white, and in the last the markings beneath are more clearly defined.*

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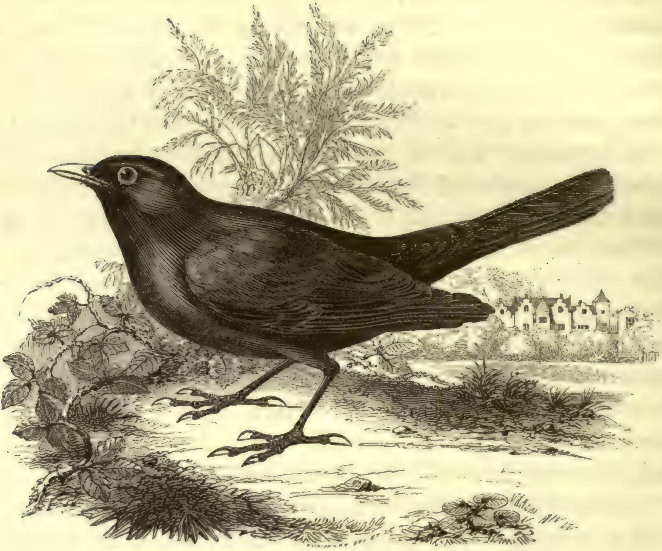
* Mr. Bond possesses a specimen of *Turdus sibiricus,* sold to him some years ago by a dealer who said it was shot in Surrey. He considered it a dark variety of the Redwing, and such it was thought to be until its true character was recognized by Mr. Blyth. This is another of those eastern species which frequently find their way to western Europe, and there seems no reason why the man's story should not be true. The absence of all details of the bird's capture in this country may, however, excuse any further mention of it here.



Turdus merula, Linnæus.*

THE BLACKBIRD.

Turdus merula.

The Blackbird, Ouzel† or Merle is a species so generally-known that little need be said of its habits or haunts. Unlike most of the genus to which it belongs, it is very seldom seen in flocks, and rarely more than two are to be observed in company. It frequents woods, plantations and hedges. Though approaching houses and always haunting gardens, it is shy, restless and vigilant, keeping upon the ground within easy reach or under cover of bushes that serve for concealment. If disturbed it takes wing with a loud chattering cry of alarm, and after a short flight suddenly turns for shelter into some thicket.

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* Syst. Nat. Ed. 12, i. p. 295 (1766).

† "The Ouzel-cock, so black of hue,
With orange tawny bill."—*Midsummer Night's Dream*, Act. iii. Sc. 1.

The food of the Blackbird varies considerably with the season. In winter it will resort to the farm-yard and vie with the Sparrow in its diligent search for scattered grain and seeds. In spring and the early part of summer it feeds on the larvæ of insects, with worms and mollusks: as the season advances it exhibits a great fondness for fruit, and its constant visits to the garden are apt to bring upon it the vengeance of the short-sighted gardener. When, however, the enormous numbers of insects, slugs and snails, injurious to vegetation and eaten by Blackbirds throughout a great portion of the year, are duly considered, it is pretty plain that the value of the fruit, consumed during a few weeks only, is counterbalanced by the services performed, and I join in the recommendation of the compassionate author of the poem on the Birds of Scotland, who, writing of the similar case of the Song-Thrush, says:—

"Scare, if ye will, his timid wing away,
But, O, let not the leaden viewless shower,
Vollied from flashing tube, arrest his flight,
And fill his tuneful, gasping bill with blood!"—GRAHAME.

The song of the Blackbird is more remarkable for power and quality of tone than for compass or variety. Its loud and clear pipe has a somewhat melancholy effect, and the same notes are too frequently repeated. The song begins early in spring, and is chiefly heard betimes in the morning and late in the evening; while observation shews that the strain is never better than during a warm April shower. It continues at intervals throughout the summer, until the regular moulting-season.

Like some other birds gifted with great vocal power, the Blackbird is a mimic of sounds. It has been heard to imitate closely part of a Nightingale's song; several instances are recorded of its having been known to crow exactly like a barn-door Cock, and Neville Wood mentions his having frequently heard a Blackbird cackle as a Hen does after laying.

The Blackbird pairs and breeds very early in the spring, generally choosing the middle of some thick bush in which to place its nest; but this is occasionally built upon the ground or against a bank, and has been found in the upper boughs of a lofty tree. The outside is made of coarse roots and strong bents of grass, plastered over or intermixed with earth, and forming a stiff wall: it is then lined with finer bents. The eggs are from four to six in number, of a light greenish-blue, mottled with dark or light red-brown; the ground being usually more blue than in eggs of the Fieldfare, and the markings often taking the more definite form of spots or streaks: but eggs of the Blackbird are occasionally found of a uniform greenish-blue, without any markings whatever, or these appear as lilac patches; while some eggs have a yellowish-white ground, with very faint markings of light rusty: they measure from 1·36 to ·95 by from ·89 to ·75 in. The first brood of young is hatched by the end of March, or early in April. Mr. Blyth (Naturalist, 1838, p. 152) knew of a pair which raised four broods, in all seventeen birds, in one season, and another prolific pair which had twenty-five eggs and reared fourteen young has been recorded by Dr. Gordon (Zool. p. 2297). This species will breed with the Song-Thrush, and in one case on record (Mag. Nat. Hist. vii. p. 599) hybrids were produced from such an union in two successive years.

The Blackbird is very generally distributed throughout the British Islands, breeding regularly in every county of Great Britain from Cornwall to Orkney, while Thompson says it is common and resident in all the wooded parts of Ireland. In some of the Outer Hebrides, however, it would seem from Mr. R. Gray, to be only known as an uncertain winter-visitant, and it is at that season alone, according to Dr. Saxby, that it appears in Shetland. Selby says that early in November vast flocks arrive on the coast of Northumberland, but remaining only a few days, resume their flight in a south-westerly direction. As Mr. Stevenson has observed a similar migratory movement in Norfolk and Mr. Blake-Knox (Zool. s.s. p. 684) in Ireland, it may be presumed to extend to other places; but a large number of our Blackbirds undoubtedly abide with us throughout the whole winter.

In Sweden the Blackbird does not appear to go further north than lat. 66°; but in Norway its range extends at least a degree higher—the Messrs. Godman having found it breeding at Bodö; and in the middle and south of each of these countries it is common. It is occasionally seen in the Færoes, and two cases are recorded of its occurrence in Iceland. It breeds in Southern Finland and over a large part of Russia, but its northern limits are not known. As regards its eastern range, Pallas says it goes as far as the Kaama, and, though he never saw it beyond the Ural Mountains, yet he mentions its being a winter-resident in Persia, where De Filippi once observed it. It has been said to occur in Cashmere and Affghanistan; but Messrs. Sharpe and Dresser consider the species from those countries to be distinct. It has been observed at Erzeroom and Trebizond in winter and spring. It breeds in Syria and Palestine, but it is not abundant there. In Egypt it is a winter-visitant and scarce. In Tunis and thence to the westward as far as Morocco it is common, and is found in the Canaries, Madeira and even the Azores. It seems to be plentiful at one time of the year or another in all the countries of the European Continent not hitherto mentioned, in many parts of the South, however, only as a winter-visitant, in which capacity it appears in most of the islands of the Mediterranean.

The bill and edges of the eyelids in the adult male are gamboge-yellow: the whole of the plumage glossy black; lower surface of the wings shining greyish-black; the legs and toes brownish-black; claws black.

The whole length is about ten inches. The wing, from the carpal joint to the end of the longest primary, four inches and seven-eighths: the second feather not quite so long as the fifth, but longer than the sixth; the third, fourth and fifth feathers equal and longest.

In the female the bill and feet are dusky brown, the plumage above is of an uniform umber-brown; the chin, throat and upper part of the breast orange-brown, with a few darker-coloured spots; belly, sides and lower tail-coverts hair-brown.

The young in their first plumage are blackish-brown above, each feather having a median spot or streak of pale rufous: lower parts light rufous-brown, with terminal dark spots. The males as soon as fledged can be distinguished by their darker colour above and their more distinct spotting beneath; after their first moult, they are intermediate in the appearance between the adults of either sex.

Some of the supposed laws which have been thought to govern the assumption of peculiar styles of plumage in birds having been previously stated (p. 213), a few remarks on the disposition and situation of the feathers themselves may here be added. It is not, however, intended to attempt to describe the structure and growth of a feather, the most complicated of all the varied products of the skin in animals, such minute anatomical and physiological details being out of place in this work; but the reader who is inclined to pursue the subject may consult with advantage Frédéric Cuvier's observations on Feathers in the 'Mémoires du Muséum d'Histoire Naturelle' (xiii. p. 327), Prof. Owen's article "Aves," in the 'Cyclopædia of Anatomy and Physiology' (i. pp. 349–353), or, still better, Prof. Burmeister's note appended to the first section of Nitzsch's 'System der Pterylographie' of which a translation was published by the Ray Society in 1867.

In young birds the first feathers are preceded in their passage through the skin by a bundle of downy filaments enclosed in a sheath which soon crumbles away; but afterwards, at the regular period of moulting, each old feather is the pioneer of that which is to follow. The natural moult proceeds by degrees, and the quill-feathers of the wings and tail are generally shed and renewed by pairs.

"Although the feathers of Birds appear to be an entire and uniform covering, they do not arise equally from every part of the body, but only from such parts of the skin as are least liable to be affected by the motion of the contiguous parts, such as the motion of the limbs.

"The feathers arise pretty equably on the head where there is no motion; and along the back; on the wings between joint and joint; as also on the thighs and legs: the whole forming a kind of partial coat of mail. As they do not arise from every part of the skin equally, they must be proportionately thick-set where they do arise.

"The places of origin of feathers are very observable in a bird that has been plucked; but still more so in young birds just feathering, more especially of such as have but little down, and of which the clumps of feathers, from their colour, as in the young Blackbird, present a great contrast with the skin.

"In the interstices of the clumps of feathers, there are others disposed irregularly, but so sparingly as not to interfere with the motion of the part."

The four preceding paragraphs from the pen of the great John Hunter, though only given to the world in 1836, and the two following representations of the nestling Blackbird, while assuming its first feathers*, are taken from Prof. Owen's 'Descriptive and Illustrated Catalogue of the Physiological Series of Comparative Anatomy, contained in the Museum of the Royal College of Surgeons in London' (iii. part ii. p. 311, pls. xlv., xlvi).

The upper figure on the next page shews the clumps of young feathers on the side and lower part of the head; the long clump of feathers down each side of the breast, which, when full grown, cover the lower surface of the body; the extended line of flight-feathers, partly concealed by the bend of the wing; and above them the various lower wing-coverts.

The lower figure shews the long clump of feathers covering the skull, and the whole length of the spinal column;

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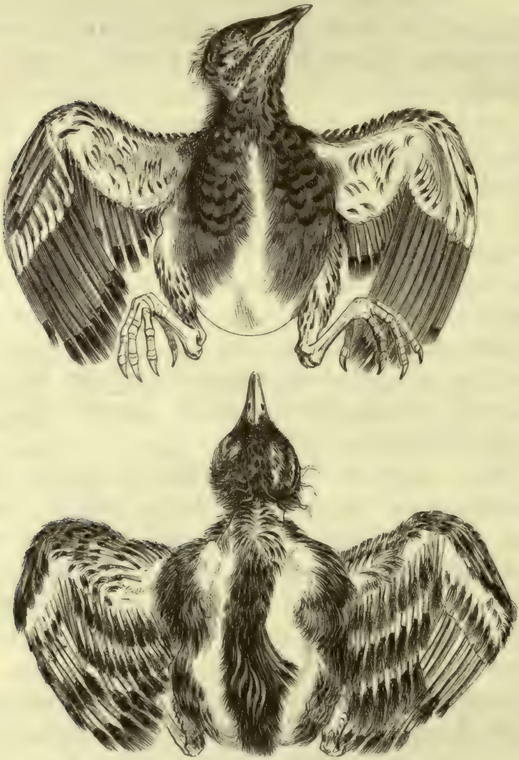
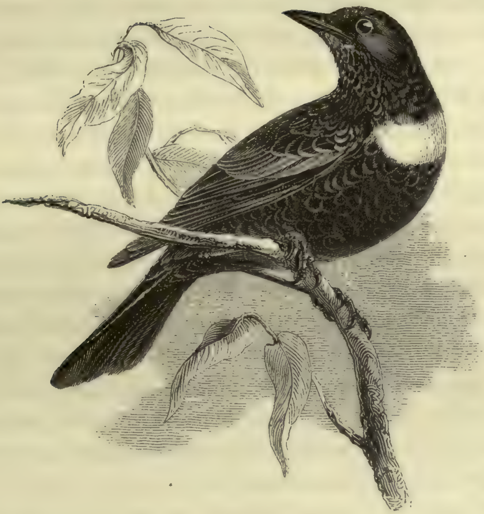
* In 1840 Prof. Burmeister published Nitzsch's work, above mentioned, wherein it was conclusively shewn that the mode in which the clumps of feathers are distributed on the body of birds is very important in revealing the affinities and differences of various groups of species, and consequently affords a set of characters of great use in classification, and to be neglected by no systematist. English ornithologists are or should be deeply indebted to Mr. Sclater, one of the earliest in this country to recognize the value of Nitzsch's labours, for inciting the Ray Society to avail itself of Mr. Dallas's experience and bring out a translation of the work.

the clumps on the sides of the body forming the scapulars and flank-feathers; and the greater and lesser wing-coverts lying in rows over the flight-feathers.





TURDUS TORQUATUS, Linnæus*.

THE RING-OUZEL.

Turdus torquatus.

THE RING-OUZEL is a summer-visitor to the British Islands, arriving regularly in April; and, passing without much delay over the enclosed and less hilly districts, it repairs to the wilder and more mountainous parts of the country, where it spends the summer, returning in September or October, when it is seen in flocks, and often makes a longer stay. White of Selborne, who took an especial interest in the appearance of this bird, mentions that some were seen in the Forest of Bere on the borders of Hampshire, at Christmas, 1770, a season which had been marked by almost incessant rain from the middle of October, but the occurrence of the Ring-Ouzel in winter seems otherwise unknown in Great Britain, for the information, received by Pennant, as to its residing in Scotland all the year round is plainly erroneous. It also occasionally happens that a nest is found in places far removed from the usual summer-haunts of the species, and such instances have been recorded, on more or less good authority, in Hampshire, Suffolk, Norfolk, Nottinghamshire, Leicestershire, Warwickshire and Cheshire. In the rocky parts of Cornwall, Devon, Somerset, Gloucestershire, Monmouthshire, Wales, Herefordshire, Staffordshire, Shropshire, Derbyshire and thence northward to Caithness, the Ring-Ouzel, according to the information collected by Mr. More, breeds regularly every year. In Orkney Mr. Dunn says its nest is sometimes found, while the bird has been frequently observed; but in Shetland it is considered by Dr. Saxby to be only a passing visitor. Bullock obtained a nest on one of the Hebrides, but Mr. Gray has been unable to trace it on any of the islands of the Outer group. In Ireland it is found during summer in suitable localities throughout the country.

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* Syst. Nat. Ed. 12, i. p. 296 (1766).

The Ring-Ouzel visits almost the whole of Europe. In Norway and Sweden it breeds from lat. 58° northward to the Varanger Fjord, but, if found at all, it is very rare in the interior of Swedish Lapland as well as in Finland; though Prof. Lilljeborg met with it on the coast of Russian Lapland. Pallas states that it never occurred to him in any part of the Russian Empire which he visited, but he mentions its being found in the Ukraine, the Crimea and the Caucasus (where Ménétries also killed it), and its having been received from Persia. There is, however, no trace of it further to the eastward than the Ural, where M. Martin is said to have procured it. It occurs in Turkey and Greece, but it is very rare in the country last named. Keyserling and Blasius say it is found in winter in Syria and in Egypt. Canon Tristram never met with it in Palestine, but Dr. von Heuglin was assured by Sig. Odescalchi of Cairo that he had often killed it in Lower Egypt.

The chief winter-resort of the Ring-Ouzel seems not to be at all known, for it does not appear to be very abundant at that season either in the south of Europe or north of Africa. It occurs, however, in Algeria and has been noticed in Morocco. In Portugal Mr. A. C. Smith reports it to be only rarely seen. It breeds in the mountainous parts of Southern Spain, according to Mr. Saunders, and there, as elsewhere, descends in flocks to the lowlands towards autumn. Throughout the greater part of France it is a bird of double passage, but some remain to breed in the mountainous districts. The same may probably be said of it with respect to Italy. It has not been noticed in Sardinia, and in Sicily it is of rare occurrence. Mr. Wright says it appears almost every year in Malta with the other Thrushes, but is one of the rarest of them. As to the rest of Europe, it would seem to occur not at all unfrequently at the seasons of transit, and in nearly every mountain district some remain to breed, while others may, as in England, occasionally stop for the same purpose in spots of a different character but yet sufficiently suitable.

In its appearance the Ring-Ouzel resembles the Blackbird; but, as already stated, it frequents wild and hilly uncultivated tracts of country, rather than those which are enclosed and inhabited. It is strong of wing, shy and difficult of approach, unless near the nest, when it becomes bold and clamorous. Sir William Jardine, in his 'Birds of Great Britain and Ireland,' observes that, while the hen is sitting, the cock may be heard from some "elevated rock singing his plaintive melody, consisting of a few notes uttered in a clear and warbling whistle. In these situations he may be frequently heard long before the eye can catch his form, for, perched on high, the colours of his plumage assimilate with the grey rocks, and some motion often first discovers him to the sight. When the young are hatched, the parents fly around with anxious cries, and will venture to attack either a dog or other animal." Thompson says that walking one summer's evening near Belfast with his dog in advance, it was amusing to see two Ring-Ouzels pursuing him, and striking the air violently within a few inches of his head, uttering at the same time their loudest cries. "Many an earnest and expressive look the dog gave towards me, as if desirous of advice in his extremity, but finding it in vain, he at length ran up to me, when the birds, nothing daunted, followed, and gave myself as well as two friends who were with me, the same salute, flying so near that we could almost have struck them with our hands. At the beginning of the onset, a female bird appeared, as if inciting the males forward, and continued until they attained the highest pitch of violence." He goes on to say that if this had been merely a case of a pair of birds protecting their young or trying to entice the intruders away, as the Ring-Ouzel has been said to do, it would have been unworthy of notice, but the assailants were both cocks. The chase of the dog continued a considerable way, and for about fifteen or twenty minutes.

The nest is generally built on or near the ground, sometimes on a bank by the side of a stream, occasionally under a rocky ledge, at the base of a stone, stump or bush, or among heather which serves as a shelter. The nest, according to Mr. Hewitson, though differently situated, is very similar to that of the Blackbird, being "outwardly composed of pieces of heather and coarse grass, with a slight layer of clay, and thickly lined with fine dry grass": the eggs, four or five in number, are very like those of the Fieldfare and Blackbird, but the markings have usually a bolder character,* they measure from 1·3 to 1·03 by from ·87 to ·82 in. The late Mr. Heysham has seen the young birds, near Carlisle, fully fledged on the 15th of June.

The food of this species is similar to that of the Blackbird, consisting of earth-worms, slugs, insects, fruit, haws and other berries, especially those of the yew and mountain-ash in autumn, and of the ivy in spring. Sir William Jardine, in a note to his last edition of White's 'Selborne,' says of the Ring-Ouzel:—"In autumn and before their departure they visit the lower country, and remain a day or a week, according to circumstances, feeding at this time upon various berries, and occasionally visiting gardens. The broods are now joined and mixed together, and the young appear in their imperfect mottled dress." Macgillivray mentions his having found the seeds and portion of the pulp of berries of the mountain-ash undigested in the intestine of this species. De Montbeillard, the colleague of Buffon, says that Ring-Ouzels feed largely on grapes in France, and are then excellent eating. In some parts of that country, as we are told by Salerne, this species is called the *Merle-terrier* or *Buissonnier*, from its lowly placed nest. The song, according to Selby, is confined to a few clear and powerful notes not unlike those of the Mistletoe-Thrush; its cry of alarm, when disturbed, is very like that of the Blackbird, but louder and harsher.

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* Though it has been here attempted to describe the general appearance of the eggs of each of these birds, as well as of the Mistletoe-Thrush and Redwing, there are some specimens which would almost defy the best judge to refer positively to any one of the five species.

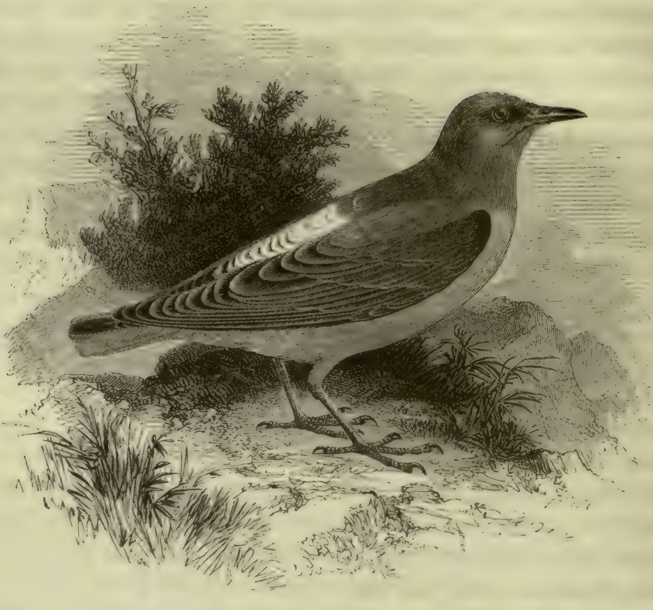
The adult male has the point of the bill almost black, with more or less yellow at the base; the irides dark brown: the head, neck, back, upper tail-coverts, wings and tail nearly uniform brownish-black; the feathers of the body edged with blackish-grey; the external margins of all the wing-feathers grey, but this lighter colour is broadest on the edges of the tertials; the chin, throat, breast, belly and lower tail-coverts are of the same colour as the upper parts, but across the chest there is a broad crescentic band of pure white: the legs, toes and claws, brownish-black.

The length is about eleven inches. The wing, from the carpal joint to the end of the longest primary, five inches and a half; the second primary equal to the fifth: the third and fourth also equal, and the longest.

The female is rather lighter in colour than the adult male, and the grey margins of the feathers are broader; the band across the chest is narrower; the white is less pure, and clouded with reddish-brown and grey.

Young males resemble the adult female, but have the feathers of the back with lighter margins, and in young females the pectoral gorget is scarcely perceptible.

PASSERES. *TURDIDÆ.*



MONTICOLA SAXATILIS (Linnæus*).

THE ROCK-THRUSH.

Petrocincla saxatilis.

MONTICOLA, *F. Boie* †.—Bill stout, straight, the ridge arched towards the point. Nostrils basal, round, partly covered with hairs. Wings moderate; the first quill very short, the second a little shorter than the third, which is longest. Feet of moderate size, stout. Tail short and even.

THE specimen of the Rock-Thrush figured above, was obtained on the 19th of May, 1843, by Mr. Joseph Trigg, who shot it at Therfield in Hertfordshire, while it was sitting on an ash-tree. I saw it before it was skinned by Mr. John Norman of Royston, and received the first notice of the occurrence from my friend Mr. Thomas Wortham, whose influence

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[*] *Turdus saxatilis*, Linnæus, Syst. Nat. Ed. 12, i. p. 294 (1766).

[†] Isis, 1822, p. 552.

with Mr. Trigg obtained for me the loan of the bird for my use in this work; and I have to return my thanks to all concerned, for the opportunity of thus figuring and describing the first example of the Rock-Thrush known to occur in this country. This specimen is now in the collection of Mr. Newcome. I have since heard of another example shot by a gamekeeper, who saved only its head and neck; but this portion having been shown to a gentleman conversant with ornithology, the species was identified without difficulty from its peculiar colouring. Mr. Bedlington states (Nat. 1856, p. 21) that in June, 1852, he observed, and followed for two miles, near Robin Hood's Bay, a bird which, on afterwards seeing a coloured figure of the Rock-Thrush, he was able to identify with that species.

The habits of this Thrush, the localities it prefers and its remarkable style of coloration, have induced several ornithologists to separate it and some others of the same character from the true Thrushes, and to include them in a distinct and separate section. Friedrich Boie, chiefly influenced by the consideration last mentioned, carried this view still further, and, in 1822, proposed for this group of birds the generic title here adopted, naming the Rock-Thrush as the type of his new genus. In 1828, Vigors, possibly unacquainted with the step already taken, conferred the name *Petrocincla* on the same group. Mr. G. R. Gray has always refused to admit its generic value, and probably is therein justified; but as in former editions of this work the Rock-Thrush was removed from the genus *Turdus*, it seems expedient so to treat it now, with of course the necessary alteration required by the priority of Boie's name. These birds inhabit rocky and mountainous districts, their stout legs and short tails, as compared with the true Thrushes, enabling them to traverse rough ground with ease.

This Rock-Thrush is an essentially migratory bird with a very wide range, which extends far enough to the northward to justify its being legitimately included in the present work. It is a regular summer-visitant to most of the mountainous parts of temperate Europe and Asia. It has occurred in

Belgium and in Heligoland. A few breed every year on the Hartz Mountains, and it may be traced thence in an eastward direction across the Russian Empire, being common, in certain elevated and rocky localities, to China, where, Père David says, it summers on the Pekin Mountains. Mr. Blanford obtained it near Ava in Burma, and, though not yet recorded from the plains of India, it is said to have been procured in Western Thibet, as well as in the upper portion of the Sutlej valley, Cashmere, Yarkand and Turkestan. It has been met with on the Persian coast of the Caspian Sea, and is a summer-visitor to Palestine, arriving from its winter quarters in Arabia or Africa, for many observers have noted it as a bird of double passage in Egypt, and it has been obtained as far south as Abyssinia. The late Mr. Chambers-Hodgetts saw it in Tripoli, and it is stated by Loche to be resident in Algeria, occupying the highest parts of the Atlas. On the west coast of Africa it has been found, according to Messrs. Sharpe and Dresser, at Casamane and Bissao. In most of the islands of the Mediterranean as well as in the lower parts of the countries bordering its northern shores, the Rock-Thrush is a common bird of double passage, but it also breeds more or less abundantly in the mountainous districts of their interior, and there are few, if any, of the higher ranges of Central Europe which do not afford it a summer home and consequently a nursery.

The male is an excellent songster, and is a common cage-bird in some countries. Naturally it is very shy and difficult of approach, settling on prominent places, whence it is able to command a view all around. It feeds on various berries, insects and earth-worms. Among fragments of rock, or loose stones, the pair make their nest, which is constructed of moss, lined with fine roots or hair; the eggs, five or six in number, and measuring from 1·12 to ·97 by from ·77 to ·55 in., are a light greenish-blue, not shining as those of the Song-Thrush, and generally without markings, but occasionally slightly speckled and streaked with reddish-brown.

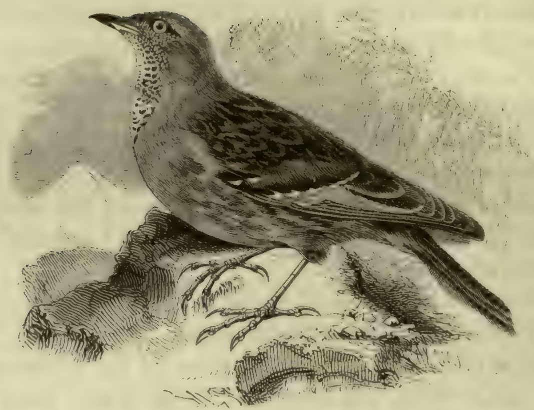
The male bird has the bill black, the irides hazel: the whole of the head, neck and upper part of the back bluish-grey, passing into brownish-black on the scapulars; the lower part of the back white, varied with a few bluish-grey feathers; tail chestnut-brown, the two middle feathers rather darker than the others; wings and wing-coverts dark brown, almost blackish-brown; the greater wing-coverts and secondaries tipped with buffy-white; the body beneath, and lower tail-coverts, light chestnut-brown or bay: legs and toes dark reddish-brown.

The whole length seven inches and a half; the wing from the carpal joint to the end of the longest quill four inches and three-quarters.

The female has the body above of a dull brown; on the back are some large white spots edged with brown; throat and sides of the neck pure white, some of the feathers occasionally varied with ash-brown; all the other lower parts reddish-white, with fine transverse lines at the end of each feather; tail light bay, the two middle feathers ash-brown.

A young bird of the year, killed near Geneva in July, 1850, and kindly lent to me by Captain G. J. Johnson, formerly of the Coldstream Guards, has all the upper parts light ash-brown, each feather terminated with a spot of greyish-white. Wing-quills tipped with buffy-white: wing-coverts edged with grey and tipped with buffy-white; tail red; the two middle feathers greyish-black; the body beneath something like that of the adult female, but more varied with white, which is again intersected with brown lines.

Mr. Blake-Knox has recorded (Zool. s.s. p. 2019) the occurrence in Westmeath, on the 17th of November, 1866, of an example of the Blue Thrush (*Monticola cyanus*), which is now in the Museum of the Royal Dublin Society. The southern range of this species, even though it has occurred as a straggler in Heligoland, seems to render its enrolment as a "British" bird inexpedient.



Accentor collaris (Scopoli*).

THE ALPINE ACCENTOR.

Accentor alpinus†.

Accentor, *Bechstein* ‡.—Bill strong, broad at the base; the upper mandible overlapping the lower and slightly notched near the tip. Nostrils basal, oblique and linear. Wings moderate, more or less rounded; the first feather very short, the third generally the longest. Legs strong; the tarsi feathered at the upper end, and covered in front with several broad scales; the outer toe joined at its base to the middle toe; the claw of the hind toe much the longest.

By the kindness of the late Dr. Thackeray, I am enabled to give a figure of the Alpine Accentor from the female specimen killed in what was then the garden of King's College, Cambridge, on the 22nd of November, 1822, and recorded in the 'Zoological Journal' for 1824 (i. p. 134). At that time two of these birds had been occasionally seen climbing about the buildings or feeding on the grass-plots, and were so tame that one of them was supposed to have fallen a victim to a cat: the other was shot as stated, and the specimen is preserved at Eton. The species, however, had been previously observed in England, though the fact was not recorded until April, 1832 (Mag. Nat. Hist. v. p. 288), for, so long ago as August, 1817, as Mr. J. H. Gurney, jun., informed the Editor, an example, still in the possession of Mr. Pamplin, was shot by him in the garden of Forest House, near Walthamstow in Essex. About March, 1824, Mr. Richard Lubbock attentively observed a third at Oulton, near Lowestoft in Suffolk, as he mentions in his 'Fauna of Norfolk.' I am indebted to the late Dean Goodenough for the knowledge of the occurrence of another example, which was shot in his garden at Wells, in Somersetshire, in 1833. On January 9th, 1844, a bird was shot by Mr. Jordan, on the rocks near Teignmouth, which, though originally taken for a Richard's Pipit, is stated by Mr. W. S. Hore (Zool. p. 566) to have been an Alpine Accentor, and the same gentleman subsequently recorded (Zool. p. 879) a specimen obtained soon after near Torbay, which the Editor believes to have been killed at Berry Head, and shewn to him by its owner, Mr. F. M. Lyte, in December, 1850. Mr. Porter states (Zool. p. 5958) that on December 26th, 1857, two were shot on the Downs near Lewes, and on January 10th, 1859, Mr. Gatcombe obtained a pair of this species, which he had seen about three weeks before, on the rocks of Plymouth citadel. In addition to the record he made at the time (Zool. p. 6377) he has been so good as to inform the Editor that their "actions, when hopping about on the cliffs, resembled those of the Hedge-Sparrow, and the reddish mark on their sides appeared nearly as conspicuous as that of the Redwing. They were very tame, but when frightened took refuge in a sort of cave, uttering notes which resembled the words *tree, tree, tree,*—similar to those made by many small birds when fighting." Another specimen was, according to Colonel Newman, writing in February, 1860 (Zool. p. 6889), shot some time previously near Cheltenham; and Mr. W. W. Boulton mentions (Zool. p. 8766) his having seen one, in 1863, which had been shot near Scarborough; while the Editor has been informed by Mr. Howard Saunders (who is perfectly well acquainted with the Alpine Accentor) that on August 20th, 1870, he watched one for about a quarter of an hour on one of the highest Welsh mountains, most admirably refraining from shooting it or even mentioning the fact to his guide.

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* *Sturnus collaris*, Scopoli, Annus I. Historico-Naturalis, p. 131 (1769).

† *Motacilla alpina*, J. F. Gmelin, Syst. Nat. i. p. 957 (1788).

‡ Ornithologisches Taschenbuch, i. p. 191 (1802).

The Alpine Accentor is not uncommon in the mountainous parts of Central and Southern Europe, especially the Alps and Pyrenees, frequenting the higher elevations during summer, but seeking the valleys in winter. As a straggler, it has been observed in Heligoland and near Antwerp. In Germany, according to Dr. Borggreve, it is a semi-migrant in the brushwood-regions of the Silesian mountains. Dr. Zawadzki states that it breeds at a height of above 4,000 feet in the Central Carpathians and in Bukovina, but Herr Jeitteles says it is rare in Upper Hungary. Whether it occurs in the Russian dominions cannot be stated, for though Dr. von Middendorff says he obtained it on the Sea of Ochotsk, Mr. Swinhoe refers the specimens to a distinct species. De Filippi observed it on Demavend, and this is the most eastern locality which can be at present with certainty assigned to it. Col. Drummond-Hay says that it breeds in Crete, where he saw it, but only amongst the snow of the Sfakian range. Lord Lilford found it in Epirus; and Von der Mühle and Dr. Lindermayer give it as occurring on the mainland of Greece, though unknown in the islands—the latter believing it to be resident, and to breed among the mountains. It also inhabits Italy, and is occasionally met with in Sicily. In Sardinia it would seem to occur more regularly. It is said to be common in Southern Spain, and occurs, though rarely, in Portugal.

The food of this species consists of insects and berries, and in winter of small seeds, some of which are said to give its flesh a peculiar flavour.

This bird does not frequent bushes, nor perch on trees; but is almost always observed to be on rocks or on the ground, and is remarkable for its constant tameness, being apparently regardless of man. This disposition has been noticed in nearly all the examples seen in this country, for they allowed observers to approach unusually close to them, and when at last obliged to move, made very short flights.

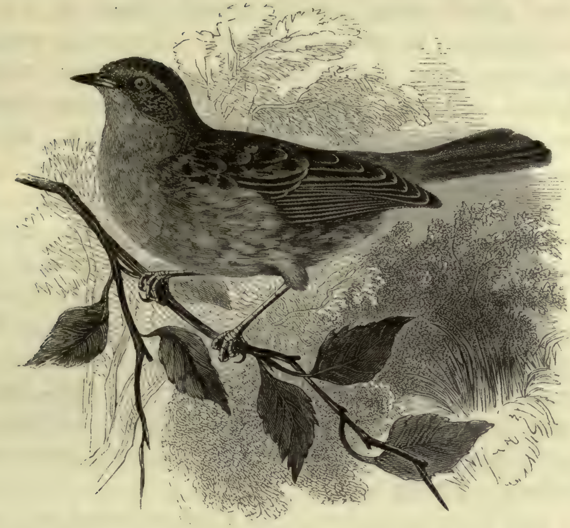
The birds at Cambridge and Wells may have been attracted by the high stone buildings, which might seem to the wanderers the best substitute for their own native crags within reach. The Alpine Accentor builds in May among stones, or in cavities of rocks, and sometimes in the roofs of houses, on the mountain-sides. The nest is formed of rootlets, grass, moss and wool, and lined with hair. The eggs are four to six in number, of a fine light greenish-blue, measuring from 1·04 to ·9 by from ·66 to ·62 in. The vignette at the end of this article represents the nest, slightly altered from the figure in Schinz's work on the nests and eggs of Swiss Birds (pl. 21).

The bill is black at the tip, and yellowish-white at the base; the irides hazel: head, neck and ear-coverts, brownish-grey; back brown, streaked with darker blackish-brown; rump greyish-brown; primaries blackish-brown, the middle of each tertial still darker, edged on both sides with reddish-brown, and tipped with dull white; wing-coverts reddish-brown, varied with black, and tipped with white; tail above dark brown, tipped with buff: chin and throat dull white, with a small black spot on each feather; chest dark grey; breast and flanks varied with chestnut-coloured patches: lower tail-coverts dark greyish-brown, edged with dull white; tail beneath ash-grey, tipped with dull buffy-white: legs and toes orange-brown; claws black.

Length of the bird described six inches and a half. From the carpal joint of the wing to the end of the third and longest primary three inches and five-eighths: the second feather longer than the fourth.

The females do not differ in plumage from the males, except that their colours are not so bright. The young are said to have the spots on the throat hardly perceptible, but the red of the wing-coverts more vivid.

The genus *Accentor* has been very generally accepted by ornithologists, though many of them are at a loss whether it should be better placed in the Family *Turdidæ* (or *Merulidæ* as some will have it) or in the Family *Sylviidæ*, and the group has been almost as often assigned to the one as to the other. This fact, with many others that could be cited, furnishes evidence in favour of uniting the Families just named in one, which in that case would bear the name *Turdidæ,* as derived from the oldest genus in it. Indeed it must be admitted that the structural characters on which any distinction between the Thrushes and the Warblers can be maintained are very insignificant, and such as certainly in no other Class of Vertebrates, probably in no other Order of Birds, would be acknowledged sufficient by any zoologist of broad views. But on the contrary it must be allowed that the distinction between these groups is in some measure justified by differences of habit—though these cannot be easily, if at all, defined in technical language; and, notwithstanding that the argument is eminently unscientific, it may be urged that the separation, recognized almost universally in popular speech, may be defended by its convenience—for, owing to the multitude of species known and the many genera which have been founded for their reception, the collection of them into one large Family would produce no small confusion. Influenced then by this motive the Editor has determined on here following the plan employed in former editions of this work, and on retaining the separation therein adopted, but it must be understood that he regards this arrangement as dictated entirely by convenience and not to be defended on any other grounds.



ACCENTOR MODULARIS (Linnæus *).

THE HEDGE-SPARROW.

Accentor modularis.

THE HEDGE-SPARROW, or Dunnock as it is called in many parts of the country, is generally diffused over the British Islands, except the bleakest of the Hebrides. In Orkney it is, however, only an autumnal visitor, and in Shetland it seems to have been only once observed.

In this country it is resident throughout the year, frequenting woods, hedge-rows and gardens, where, from spring to autumn, it feeds indiscriminately on insects, worms and seeds, but not on fruit; drawing nearer to the habitations of men as winter approaches, to gain such scanty subsistence as chance or kindness may afford; and Gilbert White truly remarks, that it is a frequenter of gutters and drains in hard weather, where crumbs and other sweepings may be picked up. It is unobtrusive and harmless, of an amiable disposition, and deserves protection and support.

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* *Motacilla modularis*, Linnæus, Syst. Nat. Ed. 12, i. p. 329 (1766).

Early in February the male may be heard singing his short and gentle song, which, though sweet in tone, is deficient in variety as well as in power. This song may still be heard throughout the greater part of the year, except a short period in August during the moult. Knapp observes that the Hedge-Sparrow is "a prime favourite. Not influenced by season or caprice to desert us, it lives in our homesteads and our orchards through all the year, our most domestic bird. In the earliest spring it intimates to us by a low and plaintive chirp, and that peculiar shake of wing, which at all times marks this bird, but then is particularly observable, the approach of the breeding season; for it appears always to live in pairs, feeding and moving in company with each other. It is nearly the first bird that forms a nest; and this being placed in an almost leafless hedge, with little art displayed in its concealment, generally becomes the booty of every prying boy."

In a nest thus easily found, the Cuckow is apt to deposit her egg, and Slaney says more Cuckows are fostered by the Hedge-Sparrow than by any other bird; but this assertion is certainly only true of some localities.

The eggs of the Hedge-Sparrow are from four to six in number, of a light greenish-blue, without spots, and measure from ·83 to ·72 by from ·59 to ·53 in. The nest, built of roots, green moss and wool, and neatly lined with hair, is usually placed low down in a bush and is generally finished early in March. The young are hatched in April, and a second or even a third brood is reared in the season.

The Hedge-Sparrow goes very far north in summer, as Pastor Sommerfelt believes that he once obtained its eggs in East Finmark, and the Messrs. Godman certainly found a nest at Bodö, in Nordland. It is given by Magnus von Wright as occurring in Finland; but there is no trace of its further extension in this direction.* Even in North Germany, where, as in most of the countries in which it occurs, it is more or less of a migrant, Dr. Borggreve says it becomes scarce towards the north-east. In Turkey, according to Messrs. Elwes and Buckley, it is not uncommon. Strickland obtained it at Smyrna in December, but considered it rare there. It is resident, says Canon Tristram, in the Lebanon; and Dr. von Heuglin met with it in Arabia Petræa in December. It is a winter-visitant to continental Greece, but seems not to occur in the islands. It inhabits all the rest of Europe, being common in most countries; but even in parts of Italy it is said to be migratory though perhaps its movements are, as is asserted by Malherbe to be the case in Sicily, merely from the hills to the lower districts. In Malta Mr. Wright says it is rare, appearing chiefly in winter. It is tolerably common in Southern Spain, breeding in the mountains, but seems to be less so in Portugal. Loche says it occurs in Algeria, but it must be rare there.

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* It is represented in Japan by the distinct but nearly-allied *Accentor rubidus*, which has also been lately obtained in China.

A remarkable peculiarity of the Hedge-Sparrow has escaped the notice of many writers, but not that of the observant Macgillivray, who says:—"This bird is liable to a singular disease, consisting of tubercular and apparently carcinomatous excrescences upon the eyelids and about the base of the bill." To the truth of this statement the Editor can bear witness, while he can add that these excrescences are not confined to the bird's head, but are also found, and sometimes of a very large size, on its feet. Naumann too has noticed the liability of this species to disease.

Some writers have objected to the name of Hedge-Sparrow for this species, on the ground that it is not a Sparrow in the sense to which they wish to restrict that word, and have suggested various other appellations by which to call it. Yet a name which Shakespear has put into the mouth of one of his fools* is hardly to be dropped, even at the bidding of the wisest, so long as the English tongue lasts. It may be easy in some cases to change a name which has been only used in technical works and known to but few and chosen readers; but the attempt to meddle with a word which is part and parcel of our language and literature is a very different thing. Those ornithologists who have adopted the term Hedge-Accentor, which roused Waterton's ridicule, need reminding that some high authorities, with no little show of reason, deny that this species is an *Accentor* at all, and for its reception Vieillot, in 1816, founded a genus *Prunella,* and Dr. Kaup, in 1829, a genus *Tharrhaleus.*

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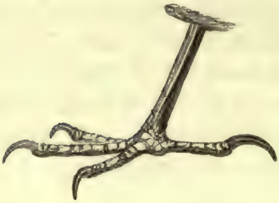
* "The Hedge-Sparrow fed the Cuckow so long,
That it had its head bit off by its young."—*King Lear*, Act i. Sc. 4.

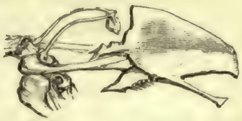
The bill is dark brown, but lighter at the base; irides hazel: head, nape, and sides of the neck, bluish-grey, streaked with brown, except behind and below the ear-coverts, where the grey alone prevails; back and wings reddish-brown, streaked with dark brown; upper tail-coverts plain hair-brown; primaries and tail dusky brown; tertials margined with reddish-brown; chin and throat grey; breast and belly buffy-white; sides and flanks pale brown, with dark streaks; wings and tail beneath, greyish-brown; the tail slightly forked: legs and toes orange-brown; claws black.

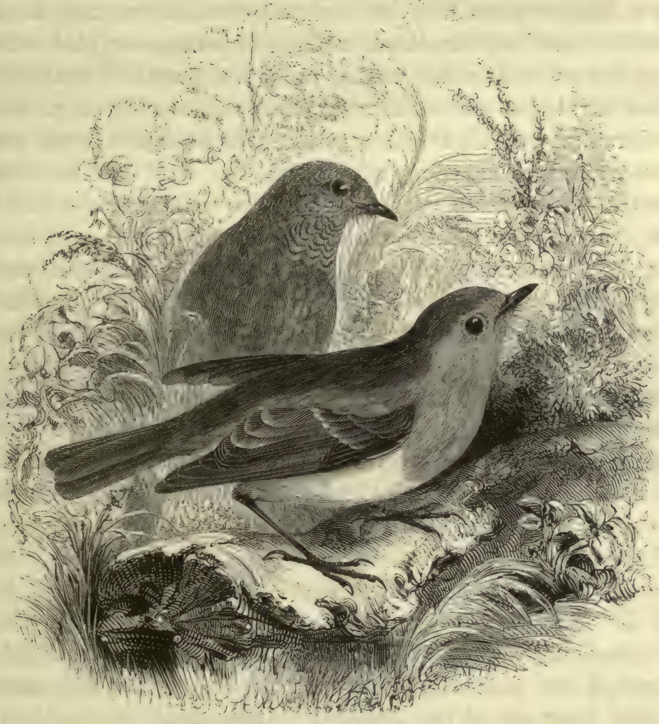
The whole length rather more than five inches and a half. From the carpal joint to the end of the fifth and longest primary, two inches and three-quarters; the second a little longer than the seventh, but shorter than the sixth; the third, fourth and fifth feathers nearly equal.

Females resemble the males, but are a little more spotted on the head and beneath. The young before their first moult have the throat greyish-white, varied with small darker-coloured spots, and the general colour of the other parts darker, the feathers above being tipped with rufous.

The figures below represent the foot of *Accentor alpinus,* and the breast-bone of *A. modularis.*







ERITHACUS RUBECULA (Linnæus *).

THE REDBREAST.

Erythaca rubecula.

ERITHACUS, *G. Cuvier* †.—Bill narrow and depressed at the base, inflected towards the point, the upper mandible slightly notched. Nostrils basal, lateral and oval. Wings rounded; the first quill only half as long as the second, which is shorter than the third; the fourth, fifth and sixth, nearly equal and longest. Legs long and slender; the tarsi with a single scale in front; the outer toe a little longer than the inner, and united at its base to the middle; the hind toe longer and stronger than the others. Plumage generally soft.

THE REDBREAST is so generally distributed over the British Islands, and, mixed up as it is with our earliest associations, is so universal a favourite, that all are sufficiently interested in it to be more or less acquainted with its habits. These to a large extent may be observed even at our very doors, and to the attentive naturalist there is perhaps no bird which supplies so ready a key to that most wonderful of ornithological mysteries—seasonal migration, little as even now we understand it. Undeniably resident as a species in our own country, close scrutiny will reveal the fact that its numbers are subject to very considerable variation according to the time of year. Towards the end of summer the old birds for the most part withdraw from ordinary observation, betaking themselves to the shelter and comparative privacy which the luxuriant foliage of that season affords them, while food being then plentiful and obtained with little exertion, these conditions favour their successfully undergoing the annual moult—one of the severest strains to which bird-life is exposed. That process completed, they return towards autumn to their familiar haunts, which in the meantime have been occupied by their progeny, the young of the preceding spring. The old birds, then in renewed vigour, proceed to engage the young, and each lawn and thicket becomes a battle-field; but so far from the vulgar belief of the latter destroying the former being well founded, the young are almost invariably worsted and possession remains with the victorious parents. What becomes of the defeated is not exactly known, but it may be plausibly suggested that, driven away from the place of their birth, they join the numerous bands of allied species which are then seeking more southern regions (for it is unquestionable that in most parts of the Continent the Redbreast is a bird-of-passage, commoner in the fall of the year than at other times), and help to swell the stream of emigrants then setting steadily towards warmer climes. For such as survive the mishaps of the long voyage, which possibly has for its goal some oasis in an African desert, there is no cessation of peril, since the winter-quarters of the wanderers are beset by hosts of birds-of-prey both small and great, so that, wanting in experience and strength to escape, few are left to return when the northward movement begins in the following spring. But the migratory influence affects, though in a less degree, many if not most of the Redbreasts which remain at home. Content as they are during the autumn to occupy the woods, hedges and gardens which form their usual haunts, the first sharp frost has a decided effect upon their distribution, while a heavy fall of snow drives them towards the homesteads for the supplies of food they find there; but should severe and long-continued hard weather supervene, and sustenance become more scarce, even these stranger birds vanish—one knows not whither, leaving only the few which had before become almost domesticated; and it need scarcely be said that in winter every country and many a suburban dwelling has its attendant pensioner, who, being "sacred to the household gods," requires but little invitation to become an indoor guest. Thomson indeed has truly described the half-confident, half-doubtful manner of the Redbreast when he ventures to enter the cottage to pick up the proffered crumbs:

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* *Motacilla rubecula*, Linnæus, Syst. Nat. Ed. 12, i. p. 337 (1766).

† Leçons d'Anatomie Comparée, tab. ii. (1800).

> "——then, hopping o'er the floor,
> Eyes all the smiling family askance,
> And pecks, and starts, and wonders where he is."
>
> *The Seasons.—Winter.*

The sprightly air of this bird, the full dark eye and the sidelong turn of the head, give an appearance of sagacity and inquiry to its character which, aided by its confidence, has gained it friends; and Robin-Redbreast has accordingly acquired some familiar domestic name in almost every country of Europe*.

The song of this species is sweet and plaintive, but not very powerful. White of Selborne says that Redbreasts "sing all through the spring, summer, and autumn. The reason that they are called autumn songsters is, because in the two first seasons their voices are drowned and lost in the general chorus; in the latter their song becomes distinguishable." He adds that many songsters of the autumn seem to be the young cock Redbreasts of that year.

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* In common English the word "Robin" has come to be used as equivalent to "Redbreast," and thus in various parts of the world colonized by our countrymen the former term is generally applied to any well-known redbreasted bird, as in North America to a species of Thrush (*Turdus migratorius*) and in Australia to several species of the genus *Petrœca*.

As the song of the Mistletoe-Thrush is by many associated with a stormy season, so is that of the Redbreast often considered a prognostic of fine weather. Several good observers have expressed their belief that when at evening a Redbreast takes its stand on the topmost twig of a tree or other elevated position, and there continues to sing, a fine day may be safely predicted on the morrow. This evening song however is not to be confounded with the peculiar call-note uttered by the bird when ordinarily retiring to rest. It is one of the latest of diurnal birds to go to roost, and one of the earliest to be seen moving in the morning.

Insects, in their various stages, and earthworms, form the principal food of the Redbreast during the greater part of the year. The former are chiefly sought for among dead leaves under trees or bushes, and the latter in more open ground. In its search for worms, which it beats on the ground before swallowing them, the bird has much the manner of a Thrush. As summer advances, berries and to some extent garden-fruits enter into its diet, while its almost omnivorous appetite on the setting-in of hard weather is sufficiently well known.

The Redbreast, like several other birds, is remarkable for the peculiarity of the situation in which it sometimes builds its nest, and pages might be cited from various writers, especially in different periodicals, to confirm this statement. Some of the more marvellous cases recorded are mentioned in the late Bishop Stanley's justly popular 'Familiar History of Birds'; while a large collection of anecdotes shewing many of the whimsical habits of this feathered favourite has been compiled by Mr. Morris, and will be found in his 'British Birds'. Yet, notwithstanding all the apparent confidence with which the Redbreast approaches man and his works, few birds are generally more jealous of the least interference. Even after incubation is begun, the sudden discovery of the nest, while the owner is upon it, without disturbance of its contents, will often make the bird forsake its eggs, and handling these at any time, except with the greatest care, is pretty sure to have the same effect.

The Redbreast breeds early in spring: the nest, formed of moss, dead leaves and dried grass, and thinly lined with hair or a few feathers, is most frequently placed on a sheltered bank, or a short distance above the ground in a thick bush, sometimes in a hole of a wall partly covered with ivy. The eggs are from five to seven in number, white, speckled, streaked or blotched with light red, the markings often being confluent over almost the whole shell; but some eggs are quite white. They measure from ·83 to ·68 by from ·66 to ·56 in. Two or three broods are produced in the course of the season.

These birds exhibit great attachment to each other. Neville Wood writes in the 'Naturalist' for 1837 (ii. p. 105):—"One that we caught and caged in November, 1835, was for several weeks constantly attended by its mate, which seems to prove that this bird pairs for life. When any one approached the cage, the male departed very unwillingly, and, if wholly excluded from the room in which the prisoner was confined, it would utter the most unceasing and piteous wailings. After some time, however, the visits became gradually less frequent, and at length ceased altogether."

With many redeeming qualities, the Redbreast is, however, one of the most pugnacious among birds, and maintains its right to a certain limited domain against all intruders.

Generally diffused over the British Islands, the Redbreast occurs all the year round even so far north as the Orkneys, but it does not breed in the Shetlands, and has only of late been found in the Outer Hebrides. According to Herr C. Müller it not rarely occurs in the Færoes in autumn. Herr Collett says that some winter in the south-west of Norway, but generally it is a summer-visitant to that kingdom, breeding as far north as lat. 67°. In Sweden it is said to be the first of the Warblers to come and the last to go; still it seems not to breed further than lat. 64° N. though it occasionally occurs beyond that limit, and the Editor was told by Wolley that he had once seen one in autumn at Muonioniska in lat. 68° N. Magnus von Wright says the same of its sojourn in Finland as is said of it in Sweden, but its range is probably less extended, as it is not included by Dr. Malmgren among the birds of the Kajana district. It occurs in Russia, but seems to be less abundant there than in the rest of Europe, and is not known to the eastward of the Ural Mountains* or the Caspian Sea; but Ménétries found it, though not common, in the Caucasus. De Filippi met with it in Persia. Mr. Keith Abbott sent skins of it from Trebizond; but, though it doubtless occurs in the west of Asia Minor, Strickland did not observe it at Smyrna. Messrs. Elwes and Buckley report it as common in Turkey. In Palestine Canon Tristram found it everywhere in winter, but none remained after February. In Lower Egypt, according to Dr. von Heuglin, it appears pretty regularly in winter, staying till March. Loche states that it occurs in all three of the Algerian provinces, but it is there probably as a winter-visitant only, and Canon Tristram observed it abundantly at that season in the oases of the Great Sahara. Mr. Frederick Godman has met with it in the Canaries, Madeira and the eastern and central groups of the Azores, and it is especially worthy of remark that examples from the islands last named agree with those from Algeria and Southern Europe, being paler in colour than British or North-European specimens, while those from the Canaries and Madeira are identical with the darker northern form. Throughout the remaining countries of Continental Europe it is more or less common, and in nearly all its migratory habits are well known; even in North Germany very few pass the winter—chiefly, according to Dr. Borggreve, in Westphalia and the Rhineland.

During the southward migration of the Redbreast it is caught in very large numbers for the table, and in autumn the bird-markets of most towns in Southern France and Italy are generally well supplied with this species, which, among many others, passes indifferently under the name of

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* Just as *Accentor rubidus* represents our Hedge-Sparrow in Japan, so a beautiful little bird, *Erithacus akahige*, there takes the place of our Redbreast.

Beccafico. Mr. Sclater observed (Zool. p. 4162) more Redbreasts than any other birds in the Roman markets, and Waterton tells us that on characteristically expressing his regret at seeing so many in a stall there, the dealer assured him that if he took home a dozen for his dinner on that day, he would come back for two dozen on the morrow. These birds are usually taken in snares or by limed twigs set round a captive Little Owl, which serves to attract the victims.

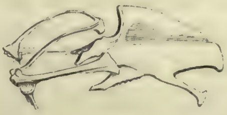
In the adult, the bill and irides are black: upper part of the head, neck, back, upper tail-coverts and tail yellowish-olive-brown; flight-feathers rather darker, the outer edges olive-brown; greater wing-coverts tipped with buff; over the base of the bill, round the eye, the chin, throat and upper part of the breast, reddish-orange, encircling which is a narrow band of bluish-grey, broadest near the shoulders; lower part of the breast and belly white; sides, flanks and lower tail-coverts, pale brown; quills beneath, dusky grey: legs, toes and claws, purple-brown.

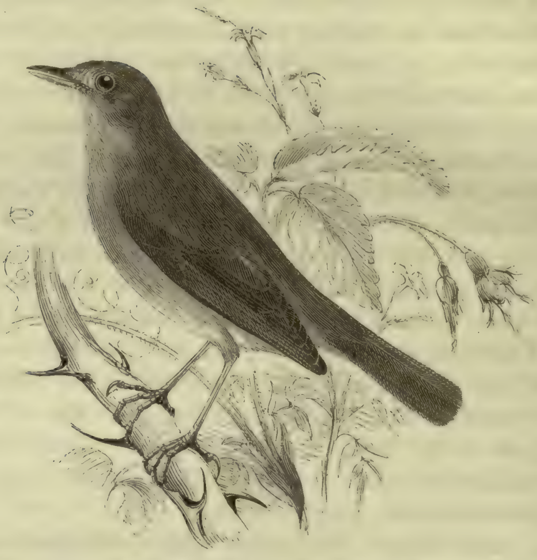
The whole length five inches and three-quarters. The wing from the carpal joint to the end of the longest primary, three inches: the second wing-feather not quite so long as the sixth; the third, fourth, and fifth nearly equal, and the longest in the wing.

The female is not quite so large as the male, and her colours are less bright. The young before their first moult have the brown feathers of the head, back and wing-coverts tipped with buff; throat and breast tinged with reddish-brown and margined with dark brown.

After their first moult they resemble the adult female, but the red of the breast is tinged with orange: the legs dark brown.

The figure below represents the breast bone of this species.





DAULIAS LUSCINIA (Linnæus *).

THE NIGHTINGALE.

Philomela luscinia.

DAULIAS, *F. Boie* †.—Bill moderate, straight; the tip slightly deflected and emarginated. Nostrils basal, supernal and round. Wings moderate; the first quill very short, the second longer than the fifth, the third the longest in the wing. Tail rounded. Legs long and slender; the tarsi covered in front by a single scale; the toes long; claws rather short.

THE NIGHTINGALE is admitted beyond dispute to possess in a higher degree than any other British Bird each of the three requisites necessary to form by their combination a first-rate song. The volume, quality, and execution of its voice are unrivalled in this country; and when the diminutive size of the musician is considered, its powers are certainly very extraordinary. The song of the Nightingale has accordingly been the theme of writers of all ages, and few have

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[*] *Motacilla luscinia* (in part), Linnæus, Syst. Nat. Ed. 12, i. p. 328 (1766).

[†] Isis, 1831, p. 542.

expressed their admiration in more fervent or more natural terms than honest Izaak Walton, who loved birds almost as well as he loved fishes, and says:—"But the Nightingale, another of my airy creatures, breathes such sweet loud musick out of her little instrumental throat, that it might make mankind to think that miracles are not ceased. He that at midnight, when the very labourer sleeps securely, should hear, as I have very often, the clear airs, the sweet descants, the natural rising and falling, the doubling and redoubling of her voice, might well be lifted above earth, and say, Lord, what musick hast Thou provided for the saints in Heaven, when Thou affordest bad men such musick on Earth!"

The Nightingale makes its appearance in this country generally about the middle of April, and the males arrive ten or fourteen days before the females. As the males sing well in confinement, and produce a price in proportion to the perfection of their song, their arrival is taken immediate advantage of. Many are caught by the London bird-catchers during the first week, and these are preserved with less difficulty; but if a male be caught after the females have arrived, and his song and attentions have gained him a mate, he is almost certain not to survive his confinement in a cage; and hence the desire among the dealers in birds to make the most of the very first of the season. Among the best judges of the powers of the Nightingale, the birds taken in the county of Surrey are considered to possess the finest quality of song. By particular feeding and judicious management, a male may be kept in song for three months together; and I have heard it stated by a successful keeper of Nightingales, that a bird of his had sung his song round upon one hundred and fourteen successive days.

This gratification however is purchased with a lavish loss of life. Mr. Gould truly says of the Nightingale:—"No bird is so easily trapped and no one is more difficult to keep in confinement: nine-tenths at least of those that are taken die within a month after their capture." Information obtained by Mr. Harting assures us that, in the year 1867, three London bird-catchers between April 13th and May 2nd took *two hundred and twenty-five* Nightingales—all, except some half-dozen, cock birds. The previous year the same men supplied the dealer who employed them with *two hundred and eighty* Nightingales, of which not more than sixty were hens! It is fortunate that this wholesale traffic is chiefly limited to the neighbourhood of London, for it is very obvious that no species can long withstand the carrying into captivity of its most robust males immediately before the breeding-season; and the fact that Nightingales do not seem to be diminishing throughout England as a whole is probably owing to the increased protection generally afforded them by the stricter practice of game-preserving which has sprung up of late years, and guards from intrusion so many nooks beloved of these and other wood-haunting birds. As will presently be mentioned, there are several places in Europe where the Nightingale has ceased to be more than a passing stranger, and this purely owing, it is said, to the assiduity with which the bird-catchers ply their trade.*

The localities frequented by the Nightingale are woods having thick undergrowth, low coppices, plantations, and hedgerows. The extensive grounds around London which are cultivated by market-gardeners, are, or would be, favourite haunts of this bird; low damp meadows near streams are also affected; and Vieillot says it is partial to the vicinity of an echo. From the pairing-time to the hatching of the young, the male continues in full song, not only singing at intervals throughout the day, but frequently serenading his partner during the night—whence the name of the bird; *galan*, in Anglo-Saxon, signifying to sing. The nest of the Nightingale is deep and placed on or near the ground, advantage being often taken of a slight depression in the soil; some dead oak, hawthorn or hornbeam leaves form the outworks, with a few dry bents and portions of rushes: towards the bottom it is lined with fine fibrous roots, but the whole is very loosely constructed.* The eggs are from four to six in number, generally of a uniform deep olive-brown, often inclining to red, produced apparently by the suffusion of reddish-brown colouring over a greenish-blue surface which is sometimes partially or entirely exposed: frequently the brown is seen lying in fine streaks on the surface, and is occasionally collected at one end in the form of a cap. The eggs measure from ·9 to ·75 by from ·69 to ·55 in., and are laid in May, the young being hatched in June. From this time the song is seldom heard; a single loud croak is occasionally uttered as a warning, should danger threaten, with a sharp snapping of the bill indicative of extreme anxiety. Montagu, having placed a nest of young Nightingales in a cage, observed, that the parents fed them principally with small green caterpillars. The adults live chiefly on various insects, but are said to eat certain berries, as those of the elder.

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* The Nightingale in a few instances has bred in confinement, and Sergeant-Major Hanley, of the First Life Guards, communicated to the Zoological Society (Proc. Zool. Soc. 1851, p. 196) the singular success which, owing to his careful study of the bird's habits, attended his first attempt to domesticate the species. He prepared a large cage, attaching a smaller one to each end of it, a passage through all three being made. In the large cage he placed a small fir-tree planted in a pot, and a plentiful supply of withered oak-leaves and moss. The smaller cages he covered with green calico and filled with the twigs of a birch-broom, so as to imitate as well as he could a thick hedge-bottom. All this he fixed high up against a wall facing a window, and procuring from a bird-catcher two Nightingales which had already paired, he turned them, as soon as they were used to captivity, into the triple cage. In about a week's time he had the satisfaction of seeing the hen with an oak-leaf in her bill. She made her nest in one of the small cages, laid four eggs and brought up three young.

When we consider that nearly all birds (to say nothing of other animals or of plants) have a definite range which they rarely overstep, the distribution of the Nightingale in this country, limited as it is, has in it nothing that can be justly termed extraordinary, though the causes of the bird keeping so strictly within certain bounds are, it must be confessed, unaccountable. In England the Nightingale's western limit seems to be formed by the valley of the Exe, though once, and once only, Montagu, on this point an unerring witness, heard it singing on the 4th of May, 1806, near Kingsbridge in South Devon, and it is said to have been heard at Teignmouth as well as in the north of the same county, at Barnstaple. But even in the east of Devon it is local and rare, as it also is in the north of Somerset, though plentiful in other parts of the latter. Crossing the Bristol Channel it is said to be not uncommon at times near Cowbridge in Glamorganshire—the information to this effect (confirmed by an example of the bird, shot in May, 1855, near the Perthkerry Woods in that locality) having been kindly communicated by Mr. Robert Boreter of Llandough Castle, and announced in the last edition of the present work. Dr. Bree states (Zool. p. 1211) that it is found plentifully on the banks of the Wye, near Tintern; and thence there is more or less good evidence of its occurrence in Herefordshire, Salop, Staffordshire, Derbyshire, and in Yorkshire to about five miles north of its chief city, but, as Mr. Thomas Allis states, not further. Along the line thus sketched out and immediately to the east and south of it, the appearance of the Nightingale, even if regular, is in most cases rare, and the bird local; but further away from the boundary it occurs yearly with great regularity in every county and in some places is very numerous.* Mr. More states that it is "thought to have once bred near Sunderland," and it is said to have been once heard in Westmoreland and also, in the summer of 1808, near Carlisle; but these assertions must be looked upon with great suspicion, particularly the last, which rests on anonymous authority only. Still more open to doubt are the statements of the Nightingale's occurrence in Scotland, such as Mr. Duncan's (not on his own evidence be it remarked), published by Macgillivray (Brit. Birds, ii. p. 334), respecting a pair believed to have visited Calder Wood in Mid Lothian in 1826; or Mr. Turnbull's (Birds of East Lothian, p. 39) of its being heard near Dalmeny Park in the same county in June, 1839.* In Ireland there is no trace of this species.

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* Poets have fancied that the Nightingale's nest contains a thorn against which the bird leans and in pain pours forth its song. Mr. A. C. Smith has ingeniously urged (Zool. p. 8029) that the fiction, which hardly requires serious contradiction, may have had a foundation in fact, and the subject is also treated in Mr. Harting's 'Ornithology of Shakespeare.' Mr. Hewitson mentions that he has seen two nests of the Hedge-Sparrow so imperfectly finished that thorns were sticking through the inside.

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* Walcott, in his 'Synopsis of British Birds' (ii. p. 228) says that the Nightingale "has been observed to be met with only where the *Cowslip* grows kindly," and the assertion receives a partial approval from Montagu; but whether the statement be true or false its converse certainly cannot be maintained, for Mr. Watson, in his 'Cybele Britannica,' gives the cowslip (*Primula veris*) as found in all the "provinces" into which he divides Great Britain as far north as Caithness and Shetland, where we know that the Nightingale does not occur.

The most northern point reached by our Nightingale seems to be the neighbourhood of Copenhagen, whence Dr. Kjærbölling says he has had its eggs; but, whether this be true or not, it is found in many places in Funen, and Scheel met with it on Moen. In North Germany, according to Dr. Borggreve, it is a bird tolerably characteristic of bushy gardens; and, though abundant in Mecklenburg, is not found in that part of Pomerania which lies north of the river Peene, nor does it reach so far to the east as Danzig. It occurs, however, sparingly on the Polish frontier near Thorn. Though appearing generally throughout South Germany, the local ornithologists give but a sad history of it, for here it does not seem to be, as in Prussia, protected by law, and in consequence it has in several districts suffered severely. This is especially the case near some of the Bavarian towns, as Ratisbon, Passau and Munich, where, according to HH. Brandt, Jäckel and Von der Mühle, it has been completely extirpated by the bird-catchers, while in other places where it formerly bred it is now only known as a passenger. It occurs in Austria, Upper Hungary and Galicia. In Russia its distribution cannot be precisely traced, but it does not reach the Governments near the Ural, though plentiful, according to Dr. Czerny in that of Kharkov, and Major Irby observed it in the Crimea, where Pallas, who also noticed it, says that formerly it was not found. Ménétries says it is not rare in the Caucasus and is especially common near the Caspian. De Filippi saw it in the gardens at Kasbin in Persia, and this is the most eastern locality in which we have positive assurance of its occurrence. Canon Tristram says it is generally distributed in Palestine, arriving at the end of March and breeding in the Jordan valley and other sheltered spots. It occurs in Arabia and in Egypt, is known as a bird of double passage on its way to and from Nubia and Abyssinia. Dr. Kotschy observed it in Cyprus, and Strickland at Smyrna. In the Cyclades generally it is only a passing migrant, though breeding in Naxos. It occurs in Greece and in Attica especially is still as common as in the days when her poets sang its praises. It would seem to be found generally in Turkey. In Styria it is said to breed but rarely. Throughout Italy from north to south, including also the islands of Sicily and Sardinia, it is plentifully distributed. It inhabits Algeria, breeding there, though many probably migrate northward in summer. In Portugal Cintra has long been famous for this bird, and it is abundant in parts of Spain and France. Thence it frequents Belgium and Holland, occasionally visiting, according to Baron Droste-Hülshoff, the island of Borkum, while it is included by Mr. Gätke among the species which have occurred in Heligoland.

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* It will be understood of course that the witnesses whose testimony is thus impugned, are not charged with any wish to deceive. Persons unused to the song of the Nightingale, and even some who are not without experience of it, may mistake that of some other bird for it, and be excused for so doing when we find the Swedish ornithologists of the present day suspecting that Linnæus himself wrongly attributed to a Nightingale the melody with which the banks of the Fyris resound. There is better evidence than most of that given above for a statement quite as extraordinary—the Nightingale's singing in England at midwinter (Mag. Nat. Hist. v. p. 654); but in reference to this and similar cases, a remark by Mr. Newman (Zool. p. 8161), that he has "been often astonished at the great mistakes made as to the song" of this bird, is very apt; and Mr. Stevenson says that from personal inquiry he is convinced that most of the "Early Nightingales" of newspaper paragraphs are Song-Thrushes.

In a note by Mr. Blyth, to his edition of White's 'Selborne,' he says that the Nightingale "appears to migrate almost due north and south, deviating but a very little indeed either to the right or left. There are none in Brittany, nor in the channel islands (Jersey, Guernsey, &c.); and the most westward of them cross the channel at Cape la Hogue, arriving on the coast of Dorsetshire, and thence apparently proceeding northward, rather than dispersing towards the west, so that they are only known as accidental stragglers beyond, at most, the third degree of western longitude, a line which cuts off the counties of Devonshire and Cornwall, together with all Wales and Ireland." It will be seen, however, from what has been stated of the distribution of the Nightingale, that this hypothesis requires modification to bring it in accordance with facts, as now known, and granting that our visitors come mainly from countries lying due south of us, it appears that the line they take—doubtless fixed by some natural peculiarities of the districts they avoid, though one cannot pretend to say what those peculiarities are—is by no means so straight as he supposed. The Exe and the south-east of Glamorganshire lie considerably to the westward of Cape la Hogue, the Channel Islands and Britany, so that to reach these places the flight must be accordingly deflected. This is only what is believed to be the case with other summer birds-of-passage, and evidence is wanting to shew that it is otherwise with the Nightingale.*

The bill is brown; the irides hazel: the head, body and wings above, of a uniform rich brown, tinged with reddish-chestnut; the tail still more rufous; the lower surface dull greyish-white, lighter on the chin and throat, darker on the breast; lower tail-coverts pale reddish-white: legs, toes and claws, brown.

The whole length, six inches and three-eighths. From the carpus to the end of the longest primary, three inches and one quarter.

The female in plumage resembles the male. The young have buff spots on the tips of the feathers above; and dark margins to those beneath.

Authors have been perplexed as to the proper name to be applied to the several sections into which the Linnæan genus *Motacilla* has been split by later writers, and none more than that to which the Nightingale belongs. Without going into technicalities, it will be enough here to say that the Editor believes *Daulias* to be the name which any one strictly following the rules for Zoological Nomenclature, adopted by the British Association for the Advancement of Science, must use, and accordingly has no hesitation in employing it in this work, though aware that the proceeding is novel.

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* At least two unsuccessful attempts have been made to extend the range of the Nightingale in this island. Mr. Dillwyn in his 'Materials for a Fauna and Flora of Swansea,' mentions that the late Mr. Thomas Penrice, by bringing several cages of birds from Norfolk, and turning them out into his woods at Kilvrough, near Swansea, hoped to introduce the species to that locality, but the experiment was a complete failure. The late Sir John Sinclair of Ulbster, in Caithness, as is recounted in many works, had a great number of Nightingales' eggs sent to him from London. These were placed in Redbreasts' nests, which had been previously found, and the young were duly hatched and brought up by their foster-parents. But to no purpose was all this done, for in September the young Nightingales disappeared and never returned to the place of their birth.

In the east of Europe a second species of Nightingale occurs, which, though long known to German bird-fanciers as the *Sprosser*, was first specifically distinguished by Bechstein as *Sylvia philomela* and by other authors is called *Philomela turdoides* or *P. major*, while it has received the English name Thrush-Nightingale.* This bird, whose regular appellation it seems should be *Daulias philomela*, extends its summer range further to the northward than our *D. luscinia*, and reaches the southern parts of Sweden: westward it appears not to cross the Rhine valley, and further south it is limited by much the same longitude, though Dr. Cara says it occurs in Sardinia. Eastward it would seem to occur in India, Mr. Jerdon (Ibis, 1869 p. 356) having recognized a specimen in the Lucknow Museum.

The vignette represents the nest of our Nightingale.

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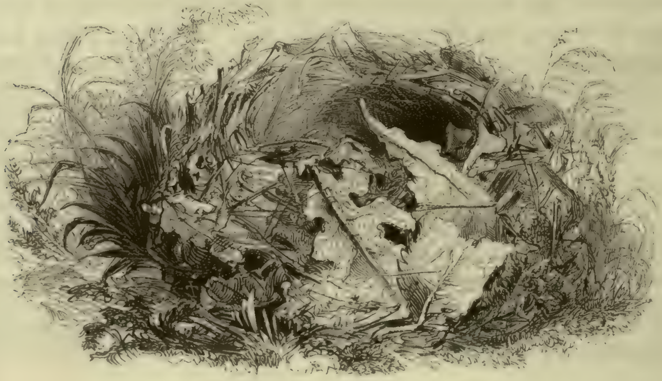
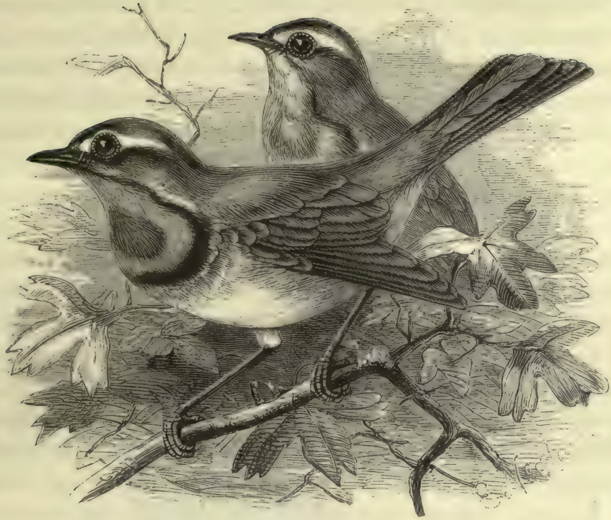
* Failing to detect the blunder of an anonymous writer (Zool. p. 1876) who applied this name to a very different bird, Mr. Morris has introduced the "Thrush-Nightingale" to his readers as a British species, when the recorded occurrences on which he chiefly relies notoriously refer not to *Philomela turdoides*, Blyth, but to *Sylvia turdoides*, B. Meyer, of which, though under a far older name, an account will by-and-bye be given here. There is no sufficient reason for supposing that the larger Nightingale of eastern Europe has ever visited this country.





Ruticilla suecica (Linnæus*).

THE BLUETHROAT.

Phœnicura Suecica.

Ruticilla. C. L. Brehm†.—Bill slender, compressed towards the point, a little deflected and very slightly emarginated. Nostrils basal, supernal and nearly round. Wings moderate; the first quill short; the second equal to the sixth; the third, fourth and fifth, nearly equal, and one of them the longest. Legs slender, the tarsus longer than the middle toe, and covered in front by a single scale; outer toe a little longer than the inner.

Two instances only of the occurrence in England of this pretty Warbler had been recorded when, in 1838, the species was included in the original edition of this work. The first bird, a fine cock, was shot on the Town-Moor of Newcastle-on-Tyne, May 20th, 1826, by Mr. Thomas Embleton, who gave it to the Museum of that town, where it still is. This fact was first noticed in 1827 by Mr. Fox in his 'Synopsis of the Newcastle Museum' (pp. 298, 308), and afterwards in the 'Zoological Journal' (iii. p. 497). The second specimen was recorded in 1837, by Mr. J. C. Dale, in the 'Naturalist' (ii. p. 275), and is said to have been killed in Dorsetshire.

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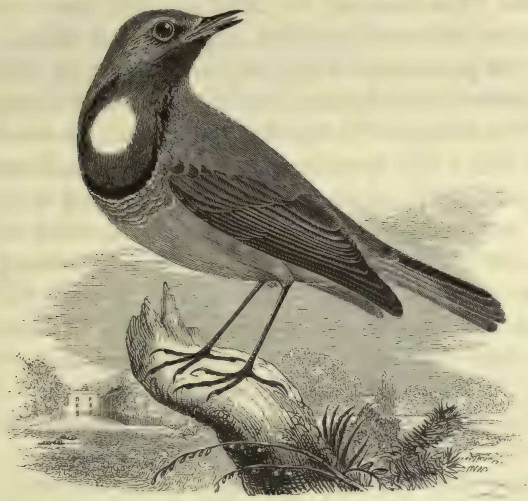
* *Motacilla suecica*, Linnæus, Syst. Nat. Ed. 12, i. p. 336 (1766).

† Isis, 1828, p. 1280.

Soon after the time last mentioned, I was informed by Mr. Plumptre Methuen that a specimen killed near Birmingham was in his possession, and subsequently Mr. J. H. Gurney sent me word that a male example had been found dead on the beach at Yarmouth, September 21st, 1841. Mr. Morris mentions, on the authority of Mr. E. Cole, one shot at Margate, in September, 1842, and in September, 1844, two specimens, one old, the other a young bird of the year, and both then unskinned, were sent for my inspection by Mr. Gardner. These were said to have been shot in the Isle of Sheppey. The Strickland Collection in the Museum of the University of Cambridge contains an example labelled "Britain, 1846"; but no further particulars of its locality are known. About September 15th, 1852, one was shot near Whimple, in South Devon, as recorded by Lord Lilford (Zool. p. 3709). A hen killed at Worthing, May 2nd, 1853, is mentioned by Mr. J. W. Stephenson (Zool. p. 3907) and a cock killed early in May, 1856, near Lowestoft (Zool. p. 5149), is also in Mr. Gurney's collection. Mr. Cecil Smith notices one said to have been killed in Somerset in 1856 and now in the Exeter Museum, and Mr. H. Pratt records (Zool. p. 8281) a cock caught at Brighton, October 1st, 1862, which is in Mr. Borrer's collection. Captain Hadfield in the 'Zoologist' for 1865 and the two following years, gave a series of observations made at different times on a Blue-throated Warbler which, he says, frequented a locality in the Isle of Wight from at least February, 1865, to September, 1867, being for part of the time joined by a second. Finally Mr. Gray has informed the Editor that a cock was caught on board a fishing-boat off Aberdeen, May 16th, 1872.

Whether there is more than one species of Bluethroat is a question which has been long debated and cannot yet be deemed settled. Three forms are found, the males of which, when in breeding-plumage, can be readily distinguished, and two of them certainly have different breeding-grounds. The bird named by Linnæus *Motacilla suecica* is characterized by him as possessing a red spot in the middle of its blue throat,* and seven at least of the specimens obtained in Britain—namely, the Newcastle, Yarmouth, Lowestoft, Brighton and Aberdeen examples, as well as that in the Strickland Collection—undoubtedly belong to this form, which, to say nothing here of its more eastern range, is a well-known summer-visitant to the higher and more northern parts of Norway and Sweden. But the majority of Bluethroats which come to the rest of Continental Europe have a white instead of a red spot, and these white-spotted birds, erroneously regarded by most ornithologists as the true *M. suecica*, were in 1831 first distinguished by Brehm (Handbuch, p. 353) as *Cyanecula leucocyana*,† and do not ordinarily advance further north than Holland in the west, or cross the Baltic in the east. The third form,



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* This fact has been overlooked by most writers, who, while applying the epithet *suecica* to the commoner inhabitant of Europe, which never visits Sweden, have bestowed on Linnæus's bird other specific names, as *orientalis*, *fastuosa*, *indica*, and *dichrosterna*.

† The name *Sylvia cyanecula*, Wolf (Taschenbuch, i. p. 240), though older, is not distinctive, any more than is Pallas's *M. cœrulecula* (Zoogr. R.-A i. p. 480).

with the throat entirely blue, received in 1823 from the eldest Brehm (Beiträge, ii. p. 173) the name of *Sylvia wolfi.* This would appear generally to accompany the white-spotted rather than the red-spotted form, and to it would seem to be referable one of Capt. Hadfield's birds (Zool. s.s. p. 172). With this possible exception, the Editor has no certain information as to the occurrence in the British Islands of any but the red-spotted form—the true *Ruticilla suecica,* of which a male and female are figured at the head of this article ; but, as there is always a likelihood of the white-spotted bird, *R. leucocyana,* finding its way to this country, he retains (on page 323) the representation of it used in former editions of this work.

In the 'Naumannia' for 1855 (p. 166) Dr. Altum published some observations which might at first sight appear to decide the question at issue, and he accordingly thinks that the supposed three species are but phases of plumage successively undergone.* On the other hand, it must be remarked that a very considerable variation in the length of the tarsus, commonly correlated with the colouring of the throat in the males, is observable. Thus in *R. wolfi* the tarsus measures from ·95 to 1 inch ; in *R. leucocyana* from 1·04 to 1·08, and in the true *R. suecica* from 1 to 1·18, thus shewing that the entirely blue-throated birds on an average have the shortest and the red-spotted the longest legs, while the white-spotted form is intermediate in this respect. Furthermore, not only have, as already said, *R. leucocyana* and *R.*

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* In July, 1854, Dr. Altum bought a live Bluethroat, a young cock, then having a dirty-white chin and throat, beneath which was a pale blue band bordered with black across the upper part of the breast, and lower down the ordinary reddish colouring. This plumage the bird kept till the beginning of March, 1855, when the blue already existing gradually became deeper, through the wearing off of the white edges of the feathers, and the narrow black border more distinct, while some blue feathers sprouted higher up on the throat. The original blue now became day by day, clearer, and that which had just begun to appear, broader, so that, on March 21st, it covered the whole throat except the chin and a round spot of greyish-white in the midst. To his surprise, on the 23rd, he found this spot grown reddish, so as to resemble the characteristic of the true *R. suecica* (*cærulecula,* as he calls it) and two days later the whole breast was blue, nearly as in *R. wolfi.* A week afterwards a clear white spot appeared, and the bird was a perfect *R. leucocyana.*

suecica a perfectly distinct breeding-range, but the parts of Europe inhabited in summer by each are separated by a wide interval. Thus the first, though local, breeds generally throughout temperate Europe in suitable places from Holland across North Germany, and nowhere in these countries does anyone pretend to have found the second taking up its abode. Then we have the southern and lower parts of Scandinavia wherein no Bluethroat at all breeds; but, as soon as we reach the mosses of its subalpine and northern districts, a Bluethroat appears, which is invariably the *R. suecica*, retaining its characteristic red spot throughout the season, and breeding as generally in those chilly solitudes as *R. leucocyana* does in the lower latitudes of Holland and North Germany. In the face, then, of these facts, the evidence of Dr. Altum cannot be deemed conclusive, the more so as a close attention to his very words, and the instructive figures by which they are illustrated, shews that his bird never completely assumed the appearance either of *R. wolfi* or of *R. suecica*, but that it did finally possess the full characteristics of *R. leucocyana*, to which form it no doubt belonged.*

The food of this bird is earthworms, insects and berries. Its song, usually delivered from an exposed branch, and never more effectively than in the broad daylight of a Lapland midsummer's night, is indescribably delicious and varied, as may be inferred from the bird bearing in the extreme north of Europe a name, signifying "Hundred-tongues," which further south is given to the larger Nightingale. Its call-note is plaintive, and the cry of alarm loud and harsh. On the ground, its movements are so brisk and even that it has been said by good observers, among them Bechstein and Mr. Blyth, to run like a Wagtail, but, so far as the Editor's experience goes, and in this he is confirmed by Naumann's opinion, its progress, though much more speedy, is by hopping like a Redbreast, to which bird it has great resemblance in some of its actions. Its tail, however, is in constant motion, being alternately spread laterally and closed. It breeds chiefly in wet places overgrown with willows and bog-plants. The nest is built on the ground, generally in the side of a hole, and consists of a large foundation of leaves and grass loosely piled together, in the midst of which is a more carefully constructed and deep cup of finer materials. The eggs, to the number of six, are shining, and appear to be of an olive-colour, deep when they are fresh, but soon paling, and caused by the suffusion of reddish-brown or the confluence of innumerable markings of that tint on a greenish-blue ground. Some are entirely whole-coloured, while others shew the ground plainly between the markings. They measure from ·78 to ·65 by from ·59 to ·51 in. Though the old birds are shy, the young, when they have left their parents, often frequent the neighbourhood of houses. In Asiatic Russia, according to Pallas, there is no bird in whose nest the Cuckow more frequently lays its eggs than this.

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* Dr. Altum s opinion is also ably controverted in the 'Œfversigt' of the Academy of Stockholm for 1860 (xvii. p. 201) by Herr Meves, but this observant naturalist is certainly mistaken when he supposes *R. leucocyana* to be only the young of *R. wolfi.*

The red-spotted form of Bluethroat is found in winter throughout India and North-eastern Africa as far as Abyssinia. In spring it sets out northwards, reaching the far east of Siberia on the one side, and apparently stretching diagonally across Europe on the other, its summer-quarters being the more northern parts of the Russian Empire and, as already mentioned, of Scandinavia. It is believed not to breed on this side of lat. 59° N. in Norway or of 64° in Sweden, and on those parallels only in the mountains; but it occurs thence to the most northern limit of either country, its elevation above the sea-level gradually decreasing as it approaches the Arctic Ocean. In Siberia, it was found breeding not rarely on the Boganida, in lat. 70° N., by Dr. von Middendorff, who expressly states that all the birds he saw belonged to this form, as also does Herr Radde. In the countries intervening between its summer and winter-quarters it appears only as a migrant, and it occurs, according to Mr. Swinhoe, generally throughout China; but as regards that part of Europe over which it probably passes twice a-year, it is singularly scarce. Mr. Gätke, however, says (Journ. für Orn. 1856, p. 72) that it occurs every spring, and in favourable weather in great numbers, on Heligoland, whence possibly, some of those which reach this country have strayed.

The Bluethroat with the white spot, though wintering in Africa, seems generally to keep to the more western part of that continent, and Mr. Drake met with it in Morocco. It is found in Algeria; but though it does occur in Egypt, seems there to be less common than the red-spotted form, and its most eastern recorded locality is the valley of the Lar, in Persia, where De Filippi observed it. It has been killed in Malta, and occurs in Spain and Portugal. In most parts of Europe it is a well-known though local bird. It breeds, according to M. Bailly, in Savoy, but in small numbers; as also, says M. Gerbe, in some parts of France, the departments of the Lower Charente, the Saône, and the Saône and Loire. Further north it is more abundant, and breeds regularly in the ozierbeds of Belgium, on the boggy heaths of Holland, and in North Germany in every willow-garth, says Dr. Borggreve, from the Rhine to the Vistula.

The third and unspotted form of Bluethroat is much scarcer than either of the others, and its range cannot be indicated with any precision. It seems to occur most frequently in Germany, but has been obtained also in Holland and Spain.

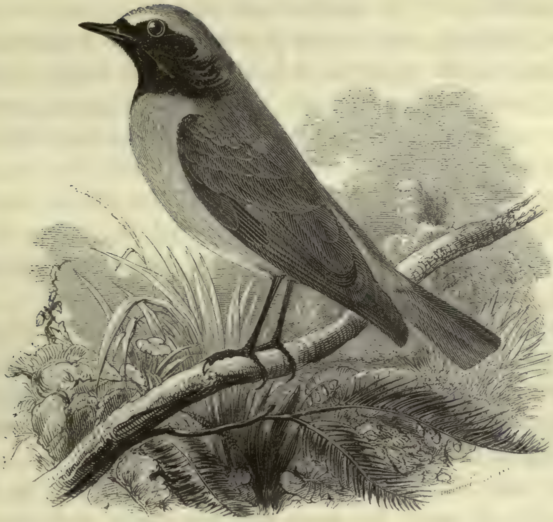
The Bluethroat has been commonly placed by authors in the same genus with the Redstarts, by whatever name that genus is called, and any structural characters that can be found to separate them must be of the most trivial kind; still, in habits, and especially in the mode of reproduction, it differs from them almost enough to justify its segregation, and in that case the name *Cyanecula* of Brehm, which is coeval with his *Ruticilla*, should be used for it.

The bill and irides dark brown: over the eye a white streak; the head, body and wings above, uniform clove-brown, paler or slightly rufous on the outer edges of the flight-feathers, and a few of the upper tail-coverts bright bay; the two middle tail-feathers clove-brown, but the others with the basal half bright bay, the distal half brownish-black ; chin, throat, and fore-part of the neck, ultra-marine blue, with a large central spot of bright bay ; below the blue is a broad black bar, then a line of white, and still lower down a band of bright bay—but the last two markings vary in extent and one or the other is not unfrequently absent ; belly, flanks and under tail-coverts dirty-white, the last sometimes tinged with reddish-brown : legs, toes and claws, brown.

The whole length of the bird six inches. From the carpus to the end of the third and longest quill-feather, two inches and seven-eighths.

Females resemble the males in their uniform colour above ; but beneath are more variable : the chin and upper part of the throat is greyish-white, generally with an indication of blue on the sides ; lower down there is commonly a mixture of blue and of bay feathers, to which succeeds a band of blue mixed with black, and then some feathers tinged with bay. A female, however, killed from the nest in Norway, and now in Mr. Alston's collection, has no appearance whatever of either blue or bay on the throat, but has a broad dusky band across the upper part of the breast. The belly in all cases is whitish. Some old females are said to have the blue and bay almost equal in colour to that of the males.

The young in their first feathers resemble the young of the Redbreast, but the throat is white, tinged more or less with bay, and they have the characteristic tail of the adult. Young males after their first moult somewhat resemble adult females and seem to be equally variable, but the wing-feathers have broad tips or edgings of yellowish-brown.



RUTICILLA PHŒNICURUS (Linnæus*).

THE REDSTART.

Phœnicura ruticilla†.

THE REDSTART or Firetail is a summer visitor that comes to this country from the south. It is not very numerous, and in some localities is rather rare. It makes its appearance in the southern counties of England generally about the second week in April, and arrives in the neighbourhood of Carlisle by the third week, returning southward towards the end of August; but the character of the season exercises great influence in determining the time of the appearance of this bird, as well as some others, their movements being generally better indicated by the state of vegetation and temperature than by the almanack.

In some particulars the Redstart resembles the Bluethroat and the Redbreast. It inhabits the skirts of forests, lanes,

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[*] *Motacilla phœnicurus*, Linnæus, Syst. Nat. Ed. 12, i. p. 335 (1766).

[†] "Swainson." Selby, Ill. Orn. Ed. 2, i. p. 191 (1833)?

meadows, orchards and gardens, and is partial to old walls and ruins, particularly if overrun with ivy. The male bird is remarkable for the distribution and purity of the colours of his plumage, and makes himself rather conspicuous by perching on the uppermost branch of low trees, repeatedly flirting and jerking his tail, and singing his soft and sweet song,—occasionally taking a short flight to some other prominent station. Like most of those birds that are gifted with powers of song, as observed in the account of the Blackbird, the Redstart is also an imitator of the notes of other species; and some have been taught, like the Bullfinch, to repeat a tune.

The food of the Redstart is worms, beetles and their grubs, flies, spiders, ants and their eggs, fruit and berries. Most of these are sought on the ground; but it is also frequently seen to capture insects on the wing with as much ease and certainty as the true Flycatchers*.

The nest, which is rather loosely constructed, is formed externally of moss, dry grass and fine roots, and lined with hair and feathers: it is commonly placed in a hollow tree, the hole of a wall, the roof of a building, or behind a branch of a tree that is trained against a wall, and sometimes in a hole on the ground even where there has happened to be abundance of trees; while many more exceptional localities have been observed to be chosen on occasion by the bird—such as a large inverted flower-pot, to which entrance was obtained through the hole in the bottom; a partly-open drawer in a garden-shed; the gudgeon of a door-hinge, as figured by Bishop Stanley; not to mention convenient niches in the interior of inhabited houses. In Lapland on more than one occasion Wolley found that a Redstart had laid its eggs in the nest of a Titmouse (*Parus cinctus*).

The eggs are from five to seven or even eight in number, and are of a pale greenish-blue—generally lighter than those of the Hedge-Sparrow, and sometimes with a few faint reddish specks. They measure from ·75 to ·62 by from ·56 to ·51 in. Two broods are often produced in the season, the young of the first being fledged by the second week in June.

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* This feat is very characteristic of the beautiful bird usually known in North America as the Redstart (*Setophaga ruticilla*), belonging to he family *Mniotiltidæ*, which is confined to the New World, and has perhaps greater affinity to the *Muscicapidæ* than the *Sylviidæ*.

The Redstart is naturally shy and timid; but during the time the female is sitting, the male exposes himself constantly, and may almost always be seen in some conspicuous situation, not far from the nest. At this season he sings early and late; having been heard after ten o'clock at night and at three on the following morning.

The Redstart breeds regularly in all the counties of England and Wales, though a very rare bird to the westward of Exeter. In Scotland it is found in summer as far as Caithness, but it does not occur in the Hebrides, and only occasionally in Shetland, and everywhere seems to be less numerous than in South Britain. In Ireland it is also rare, and Thompson appears to have never seen but one specimen (killed near Kingstown in 1830) which had been obtained in that country, or heard of but four others.

In a northern direction, it breeds throughout Scandinavia nearly as far as the North Cape, and in Finland it is considered by Magnus von Wright to be one of the commonest of all Warblers. Herr Meves noticed it at Archangel, but further in North-eastern Russia its range cannot be traced, from its having been confounded with other species. It is said to be very common in the woods of the Caucasus, and to breed in Persia. It has been recorded from India, but apparently the species there is distinct. Specimens have been received from Erzeroum and Trebizond. In Palestine it is strictly a summer-visitant. It arrives in Egypt pretty early in autumn, and goes to Abyssinia and the White Nile, whence it returns in spring, and at that season Mr. Chambers-Hodgetts shot it in Tripoli. It occurs in Algeria, but seems not to be plentiful there, though said to be common at Tangiers. M. Berthelot and Dr. Bolle obtained it in the Canaries. It is found in Spain, but is not recorded from Portugal. In the rest of Europe it is sufficiently abundant.

In the adult male Redstart during summer the bill is black, with a narrow black band above its base; the forehead white; the top of the head, the scapulars, back and wing-coverts, lead-grey; wing-quills brown, with the outer edges rather lighter; rump, upper tail-coverts and tail bright bay, the two middle tail-feathers darker brown; the chin, throat and sides of the neck and face, jet black; breast and axillaries bright bay, belly and lower wing-coverts paler, the former being mixed with yellowish-white, which prevails on the vent; tail beneath, including the shafts of the feathers, rufous; wing-quills beneath shining grey: irides brown: legs, toes and claws dark brown.

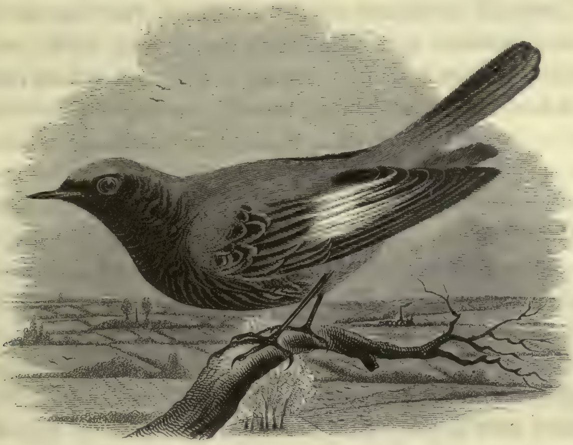
The whole length of the bird five inches and a quarter. From the carpal joint to the end of the longest wing-feather, three inches: the second primary equal to the sixth; the third the longest.

The female wants the white and black on the head; the body greyish-brown above; the bay colour of the tail rather less bright than in the males; the body and tail beneath pale reddish-brown. Very old females are said to obtain a plumage somewhat similar to that of the males, but the colours are neither so pure nor so bright.

The young in their nestling plumage a good deal resemble those of the Redbreast, except on the rump and tail, which are of a dull rufous, being dusky brown above, with a pale spot upon each feather: wing-coverts broadly edged with pale brown; breast mottled with yellowish and dusky brown.

Young males of the year after their autumn moult, and adult males in winter have the black and bay parts of the throat and breast varied with white lines; no white on the forehead of the young males; and the body above is pale reddish-brown, tinged with grey.

From the Anglo-Saxon *steort*, a tail, or (as shewn by the well-known Start in Devonshire) a point of land, we have the second syllable of this bird's name, which means simply "red tail." Therefore those writers who call the species next to be described the "Blackstart" are guilty of a palpable misnomer, since a less suitable name for it could hardly be chosen.



Ruticilla titys (Scopoli*).

THE BLACK REDSTART.

Phœnicura tithys.

The Black Redstart, which is at once distinguished from the well-known and common species, last described, by being sooty-black on the breast and belly where the other is reddish-brown, was first made known as an occasional visitor to this country by Mr. Gould, who recorded (Zool. Journ. v. p. 103) the capture of a specimen by Mr. Bond at Kilburn, near London, October 25th, 1829; and another example was afterwards seen in the Regent's Park. In 1830, two more specimens were obtained, one at Bristol, the other at Brighton. In January, 1833, a fifth occurred at Teignmouth, and in December, 1835, one was shot near Bristol. Since then the recorded occurrences have become almost innumerable and the bird is now to be considered a regular winter-visitant to most of the south-western counties*, certain localities on the coasts of the Isle of Wight, Devon, Cornwall and Pembrokeshire being hardly ever untenanted at that season. To the eastward it is less common, but it has occurred many times in Sussex, and more or less often in Kent, Suffolk and Norfolk—almost always near the sea. Further inland it has been observed as a straggler in Berkshire, Oxfordshire and Derbyshire, and so far to the northward as near Liverpool. Bellamy, in 1839, said it had been known to breed at Exeter†, and there is some reason to think that it did so in 1852 at Rongdon, in Staffordshire, as recorded by the late Mr. R. W. Hawkins (Zool. p. 3503), for the appearance of the eggs, then taken, satisfied the scruples of Mr. Hewitson (Eggs Br. B. Ed. 3, p. 106). Mr. Sterland also in the 'Birds of Sherwood Forest' (pp. 67, 68) mentions some nests found, in 1854 and 1856, near Ollerton in Nottinghamshire, which he believes were those of this species, and one of the eggs he took and kindly sent to the Editor seems to confirm the supposition. Mr. Gray too states that he was informed by Mr. George Kirkpatrick that in 1858 he found a nest and eggs at Duncow near Dumfries, which he could not make out to belong to any other than this species. In Scotland, however, the Black Redstart is a rare bird: Mr. Gray mentions only three cases in which it has occurred as a visitor: some twenty years since in Caithness; at Cullen in Banffshire in 1857; and at Kirkwall in Orkney in 1857; but Dr. Gordon informs the Editor of its having been found near Elgin in one or two instances.

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* *Sylvia tithys* (by mistake), Scopoli, Annus I. Historico-Naturalis, p. 157 (1769). This naturalist admittedly took his specific name from Linnæus, who spelt the word *titys*, as did Gesner; but the best classical authorities, Stephanus, Porson and Passow, consider *titis* to be right. This originally meant a small chirping bird, and is possibly cognate with the first syllable of our *Tit*mouse and *Tit*lark. See 'Ann. & Mag. N. H.' ser. 4, x. p. 227.

Though, as already stated, the specimen obtained in 1829 was the first to make the species known as British, Thompson says that, so early as 1818, Mr. Ball saw it about Youghal in Ireland, and in the course of that and the next few years ten examples were seen, of which five were killed in one autumn. Thompson further mentions its occurrence more recently in the same locality as well as in others on the west coast, and the capture of one on board ship between Glasgow and Belfast. In 1855 Mr. Bilson told the Editor of one obtained in Galway; and Mr. Blake-Knox, who has recorded the appearance of several examples near Dublin, kindly furnishes the information that it comes every winter to that part of Ireland, sometimes in companies of from five to twenty, and that he has seen ten or more together catching flies against a sunny wall.

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* Dorset is the chief exception, only one example being recorded thence. This occurred March 19th, 1867, at Tarrant-Keyneston, as the Editor was kindly informed by Mr. J. H. Austen, whose son shot it: the locality and date published (Zool. s.s. p. 1511) being wrong. Yet the cliffs of Purbeck and Portland can hardly escape its visits were they looked for.

† This author (Nat. Hist. S. Devon) includes the species twice, once under its usual name (p. 206) and once (p. 205) as "Sylvia Erithacus, Linn.", which is properly, as Linnæus suspected, the hen of *R. phœnicurus*.

This bird, Captain Feilden says, has lately been observed in the Færoes by Herr H. C. Müller, and Herr Preyer believes he saw one in Iceland in June 1860. It has occurred in Heligoland, and one was shot by Herr Collett at Christiania, in Norway, in April, 1864. Four examples have been observed in Sweden, all in the southern or middle provinces, and it is said to have been met with at Greenaa in Denmark. It is rare in Holstein, but commoner in Lauenburg, and occurs in most of the towns, and here and there in the villages of Mecklenburg, but is never very numerous. In the whole of North Germany, Dr. Borggreve says it is strictly a summer-bird, and within the last ten years has greatly extended its range towards the east, so as now to reach Prussia proper. Gloger, forty years ago, noticed that in Silesia its numbers were visibly increasing, and Zawadzki makes the same remark as regards the Carpathians. In Russia, Pallas only obtained it once, at Simbirsk on the Volga; but it was observed by Capt. Blakiston and Major Irby in the Crimea, and Ménétries met with it in the Caucasus. It frequents Asia Minor, at least in winter, and in Palestine is conspicuously common and resident. In North-eastern Africa, according to Dr. von Heuglin, it is a not very common migrant, and, though reaching Southern Nubia, does not go so far as the common Redstart. It is not uncommon in Tunis, is said to breed in Algeria, and occurs at Tangiers. Mr. A. C. Smith saw it in Portugal frequenting the very heart of Lisbon, and it is abundant in Spain, haunting the towns and villages in autumn and winter, and repairing to the hills to breed. Within the limits just traced it is a well-known summer-bird in most parts of Europe, choosing cities for its residence equally with high mountains, and its adaptability to such varied conditions of life, as is exemplified thus, and also by its so constantly and, for a migrant Warbler, so exceptionally wintering on our coasts, is doubtless a reason for the increased and ever increasing territory it now occupies.

The manners and food of this bird are somewhat similar to those of the common Redstart. Its nest, built of grass, moss and a few dead leaves, and lined with hair or wool, is placed in the cleft of a rock, under a heap of stones or, in towns and villages, in the hole of a wall, or the roof of a house or church*. The eggs are five or six in number, of a pure, shining white, and measure from ·85 to ·7 by from ·61 to ·55 in. The female frequently has two broods in the season. The song of the male, according to Bechstein, "contains a few high, clear notes, which may be heard from an early hour in the morning till night. The bird is always gay and active, shaking its tail at every hop, and continually uttering its peculiar call-note."

Mr. Gatcombe, who for more than twenty years has noted the regular appearance of this species in the neighbourhood of Plymouth, informs the Editor that it generally arrives about the first week of November and remains till the end of March or beginning of April. "The birds," he says, "frequent the rocks along the coast just above highwater-mark, now and then hopping on the grass on the top of the cliffs, like Wheatears, but seldom perching on a bush or twig. Quarries near the sea and stone-walls of any kind are very attractive to them, and I have also seen them on church towers and flitting among the tombstones in churchyards, taking insects like Flycatchers. I once took from the gullet of one an example, about an inch long, of *Ligia oceanica*

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* M. Gerbe mentions a nest built on a locomotive steam-engine.

—a crustacean often seen running on rocks and sea-walls. During the first week after their arrival they remain in company but then disperse. A favourite haunt is seldom without its Redstart, and should one be killed another soon takes its place. Although restless and rather shy, they seem to be easily trapped, and are sometimes caught with bird-lime. Most of those visiting us are the young of the year in their brownish-grey dress, and out-number the old males, with the black throat and white alar patch, by twenty to one. This I have also observed to be the case with those exposed in the markets on the continent in autumn, for among the many I have at different times seen I have detected only one old male. In plumage they vary considerably. I have obtained them with the throats black, but without any white alar patch, and again, with the white pretty strongly marked and not a trace of the black, but this last condition is rare, and seems to me very strange, for the black almost always appears before the white. Old males are scarce, as already said, and are very shy compared with younger males shewing the black throat but no white, while these again are scarcer than the young of the year. I believe that the old male never loses the black throat and white alar patch when once acquired; but the autumnal plumage, being long and tipped with grey, partially obscures the black throat, though adding to the extent of the alar patch: the tips wearing off towards spring, the black throat is again revealed. Indeed, but for these slight changes the old male would differ very little in summer or winter. In very old birds the back is darker. I have never known the Black Redstart remain to breed in this neighbourhood, but an old male, which I suspect had been wounded, frequented the same locality for two whole winters, and I think did not leave it during the intervening summer."

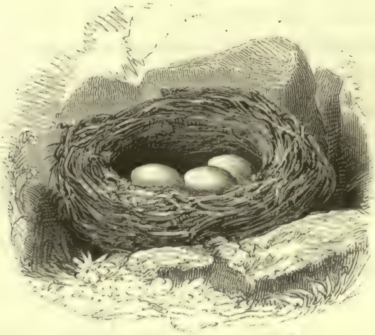
In the adult male, the bill is black, the irides blackish-brown: frontal band and lores black; top of the head, neck and back, dark bluish grey; wing-coverts and quills greyish-black, the former edged with lighter grey, the secondaries and tertials white on the outer edges; rump and tail-coverts bay; tail bay, tipped with blackish-brown, except the two middle feathers, which are blackish-brown throughout. The cheeks, chin and throat black; breast and sides dark sooty-grey, becoming slate-grey on the belly, and lighter on the vent and lower tail-coverts, which are tinged with red; lower wing-coverts dull greyish-white; the primaries lead-grey, and tail bay, beneath: legs, toes and claws, black.

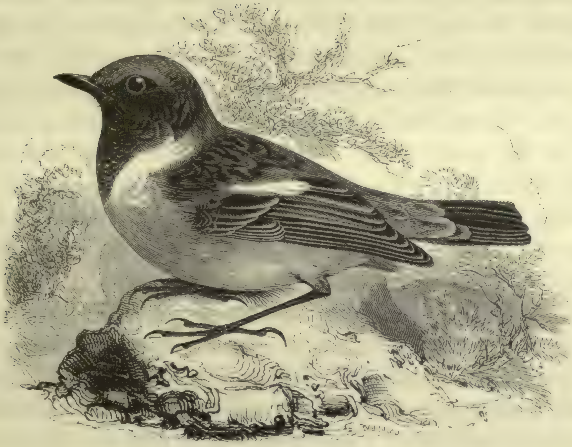
The whole length is five inches and three-quarters. From the carpal joint to the tip of the wing, three inches and three-eighths: the second and seventh quills nearly equal; the third, fourth and fifth longer than the sixth, nearly equal and longest.

The female is not very unlike that of the preceding species, but is generally somewhat darker. The upper parts are of a dull brownish-grey, the tertials margined with buffy-white; tail more dusky, and the outer pair of feathers with the outer web brown; the body beneath light grey.

The young birds in their first plumage are said to resemble adult females; but the changes the males undergo before they assume the perfect plumage, and the length of time the process takes do not seem to be well understood. Young males sometimes breed in immature plumage, and birds so behaving were once regarded by M. Gerbe as a distinct species, to which he gave the name of *Ruticilla cairii*, but he has since relinquished that opinion.

The vignette represents the nest from the plate in Schinz's work before mentioned.





SAXICOLA RUBICOLA (Linnæus*).

THE STONECHAT.

Saxicola rubicola.

SAXICOLA, *Bechstein*†.—Bill straight, broad at the base ; the upper mandible receding towards the forehead, compressed towards the tip, which is decurved and more or less indented. Nostrils basal, supernal and oval. Gape beset by a few hairs. Wings with the first quill-feather very short ; the second shorter than the third, fourth, or in some cases the fifth ; the third or fourth the longest ; coverts and scapulars short. Feet with the tarsi long, covered in front by one long scale, to which succeed two or three shorter ones ; the outer toe partly united to the middle toe ; hind claw short, strong and curved.

THE STONECHAT, a migratory species over most of that part of the European Continent where it occurs at all, is a constant resident in this country, though doubtless some of those bred here leave us in autumn, to return in the following spring. Many may be seen throughout the winter on most of our furze-grown commons and heaths, but should the weather prove very severe, they leave these exposed districts and repair to more sheltered situations, under such circumstances especially frequenting sheep-folds. At most seasons of the year this lively little bird may be seen flitting from bush to bush, restless and noisy, almost always perching on an elevated twig or rail, and seldom remaining long in one spot. From such a position it drops to the ground in quest of its prey, some insect or small worm, and rapidly returns to its post. The song of the male, often uttered while fluttering in the air, is short, but pleasing, and his bright colours and sprightly habits make him an attractive feature in many an otherwise dreary landscape.

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* *Motacilla rubicola*, Linnæus, Syst. Nat. Ed. 12, i. p. 332 (1766).

† Ornithologisches Taschenbuch, i. p. 216 (1802).

The Stonechat begins to build early in April: the nest is large, and usually placed on or near the ground at the base of a bush; the outside of one, now before me, is constructed of moss and strong grass, lined with fine bents, hairs and a few small feathers. The female lays five or six eggs of a pale greenish-blue, closely mottled with fine and occasionally confluent specks of pale reddish-brown, which are sometimes collected in a zone. They measure from ·74 to ·67 by from ·61 to ·51 in. The young are usually hatched by the middle of May; and the parents are then clamorous and bold, practising various tricks to entice intruders from their nest.

The Stonechat, though local, breeds in all the counties of Great Britain. It is very rare in Orkney and rarer still in Shetland. In Ireland it is common and resident throughout the island, but Mr. Blake-Knox has noticed that from June to October it is scarce, while its numbers increase in autumn.

The range of this species in Europe is somewhat peculiar. It is not found in Norway, and according to Prof. Nilsson has only once been met with in Sweden, namely, at Malmö, just opposite to the coast of Denmark, in which country it has, says Dr. Kjærbölling, been only twice observed. It has occurred in Heligoland, but is rare in Oldenburg and not common in Münster. Though reported to breed in Holstein and Lauenburg and to occur in Mecklenburg, it seems in North Germany to be only an accidental visitor to the right of the Elbe, and there is no trace of it further to the eastward than Western Pomerania, where it has been once met with. It is common on the Rhine and in parts of Southern Germany, but in Central Germany, as in Anhalt and Silesia, is rare. In Hungary its appearance seems to be accidental only, but it occurs in Austria, and in Styria Seidensacher states that a good many breed and some pass the winter. It was not noticed by Dr. Finsch in the Balkan, but is not uncommon in Turkey. Major Irby observed it in the Crimea, and it is said to be pretty common in Caucasia. Mr. Dresser informs the Editor that as regards European Russia it is found in the Government of Jaroslav, though scarce there, and not found in that of Moscow, and is said to occur near Tcherdyn in that of Perm, so that its range in the east is more northerly than in the west. Pallas gives it as abundant in Southern Russia in the Ural Mountains, and thence throughout Siberia, but some of the eastern specimens have the root of the tail white, and thus resemble the *Saxicola hemprichi* of Ehrenberg, while again examples from Japan, formerly considered to be *S. rubicola*, have since been referred, as also those from China, to *S. indica* (Blyth), which is said to present several differences in colour, to be smaller and to have a different voice. Mr. Blyth now thinks that the true *S. rubicola* may occur in India as well as the very similar *S. indica*. De Filippi includes the former among the birds of Western Persia; it is very abundant in Palestine in winter, and Strickland obtained it at the same season at Smyrna. The Stonechat is also found in Africa. It comes to Egypt in autumn and ascends the Nile as far as lat. 7° N., returning again in April. It occurs in Algeria and in Morocco, but is not known to breed there. MM. Webb and Berthelot met with it in Teneriffe. Swainson includes it among the birds of Senegal, and Prof. du Bocage has received it from one of the Portuguese settlements on the west coast. Further to the south, even at the Cape of Good Hope, a Stonechat of large size and brilliant colour is found, and this bird, though by some considered specifically identical with our own, was long ago described as distinct by Linnæus under the name of *Muscicapa torquata*. Returning to Europe, the Stonechat is found in all the southern and western countries of the continent. In the Cyclades it is a winter-bird; in Greece and Italy it is partly resident and partly migratory. In Sicily and Sardinia it is resident, as it also is in Provence and Southern Spain, where it breeds in the plains. In Portugal it is said to be extremely abundant, and it is found throughout the rest of France and in Belgium and Holland, where it is migratory*.

The adult male, in May, has the bill black; the irides dark brown: the head, throat, nape and back, nearly black, many of the feathers, on the scapulars and lower part of the back especially, being edged with reddish-brown; coverts of the tertials white, forming a conspicuous patch on the wing; upper tail-coverts white, tipped with black and reddish-brown; quills above black, edged with reddish-brown, beneath lead-grey with lighter edges; sides of the neck white; breast rich bay, becoming lighter, almost yellowish-white, on the belly; vent and under tail-coverts, axillaries and lower wing-coverts mottled with black and white, either colour at times almost entirely prevailing; legs, toes and claws black.

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* The difficulty of defining a "species" and deciding what to consider such, is made very plain by an examination of an extensive series of Stonechats from various localities. As already mentioned, the Stonechats of South Africa and of Southern and Eastern Asia which most resemble our own, have been separated from it and from each other, and their diagnostic characters have been laid down with much show of precision. It will be found that though these can in part be trusted, specimens are not uncommon which completely set at naught these carefully prescribed distinctions, or offer only such minute differences as scarcely any ornithologist would deem sufficient to establish a local race. Leaving for the moment such birds as the Indian *S. caprata* and *S. ferrea*, which, allied though they are to our Stonechat, naturalists, in general, would willingly consider distinct and good species, we have the Stonechat of Réunion, *S. borbonica*, wherein the two sexes somewhat resemble each other, and this must be regarded as distinct. Then we have the Madagascar bird, *S. sibilla*, plainly allied to *S. borbonica*, while still more approaching the South-Africa *S. torquata*, though certainly not to be confounded with it. But *S. torquata* only differs from *S. indica* in its larger size and deeper tints, while we find Stonechats from North Africa and Southern Europe which defy the closest scrutiny to distinguish them from Indian examples on the one hand, and cannot be separated from the true *S. rubicola* on the other. Then returning to the other Indian species, *S. caprata* and *S. ferrea* already mentioned, we find that in some measure *S. ferrea* approaches *S. borbonica*, and, though the intermediate links are wanting, is not more distinct from *S. borbonica* than that is from the typical *S. rubicola*, between which the connection through *S. sibilla* and *S. torquata* can be traced; nor does *S. caprata* differ more from *S. ferrea* than *S. ferrea* does from *S. rubicola*.

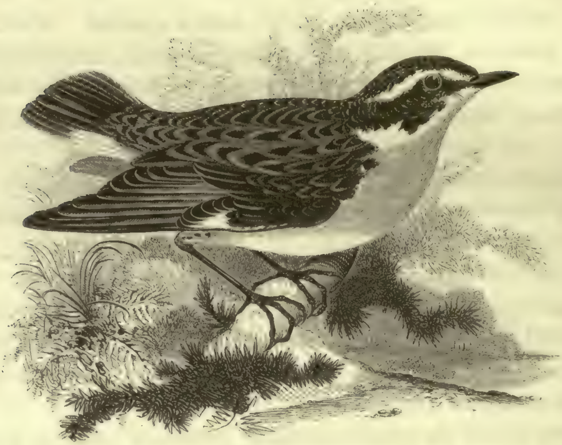
The whole length five inches and a quarter. From the carpal joint to the end of the longest quill, two inches and three-quarters: the first quill not half so long as the second; the second equal to the seventh; the third or fourth the longest, but the fifth and sixth nearly equal.

Adult males in autumn have nearly all the feathers more or less broadly edged with reddish-brown; the breast and belly lighter than in summer.

The adult female has the feathers of the upper parts blackish-brown, bordered with buff, and the edges of the quills lighter than in the male; the chin buff, throat blackish, breast dull red; the sides of the neck brownish-white, and the alar patch smaller than in the male.

Young birds in their nestling plumage have a general resemblance to the young of the Redstart, but each feather of the upper parts has a decided median stripe of buff; the wing-coverts, tertials and upper tail-coverts are broadly bordered with chestnut; the tail is blackish, edged with rufous, and the lower parts are less mottled. The males after their first moult resemble adult females, and gradually attain the adult plumage.

The genus *Saxicola* has been variously subdivided by writers; but little can be said for most of the groups established at its expense. Its smaller members however differ so much in habit from the many true Wheatears, that the separation of the former seems to be in some measure excusable, and the majority of modern ornithologists recognize the validity of the genus *Pratincola*, founded in 1816, by Koch, for the reception of the Stonechat and Whinchat, with of course their allied forms.



SAXICOLA RUBETRA (Linnæus*).

THE WHINCHAT.

Saxicola rubetra.

THE WHINCHAT, or Furzechat, is, in its habits, and in some of the localities it frequents, very similar to the bird last described. Its obvious partiality to places overgrown with furze or whins, has induced its most common names; and, like the Stonechat, it flits from bush to bush, generally perching on one of the uppermost twigs. Yet the Whinchat is not nearly so much restricted to heaths or commons as the Stonechat, but also affects enclosed fields and meadows, and is often abundant in reclaimed fen-land. It further differs from its congener in being almost exclusively a migrant, and very few authentic instances of its being observed in the British Islands in winter are recorded.

The Whinchat makes its appearance in the southern and south-eastern parts of this country about the middle of April,

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[*] *Motacilla rubetra*, Linnæus, Syst. Nat. Ed. 12, i. p. 332 (1776).

and arrives in the northern counties by the end of that month. Its call-note resembles the word 'u-tick,' and in some districts gives the bird a local name. The song is agreeable, generally uttered from the topmost twig of a bush, or while fluttering in the air. Like most song-birds, it is, in captivity, prone to imitate the notes of others. Its food is worms, insects, small mollusks and berries.

The nest, generally placed on the ground, either in a furze-bush or in the grass of a hay-field, is formed with a little moss and bents of grass, lined with finer bents; the eggs are five or six, of a bluish-green, suffused or closely mottled with fine specks, which are occasionally confluent, of pale reddish-brown, and measure from ·77 to ·68 by from ·68 to ·53 in. Mr. Jenyns says the young are hatched towards the end of May, and two broods are produced in the season.

Without being a common bird, some particular districts and seasons excepted, the Whinchat is generally diffused throughout the three kingdoms, breeding occasionally in Cornwall and regularly in some part of every other county of Great Britain, as also it is believed probably to do in every Irish county, though there rare and local. It is occasionally seen in Orkney, but has not yet been recorded from Shetland. It has once occurred, and then in December, in the Færoes. In Norway the Messrs. Godman found a few breeding at Bodö, and Wolley ascertained that it did the like at least a degree further northward on the frontiers of Sweden and Finland.* Herr Meves noticed it as far as Archangel, and it is said to be common in Southern Russia as far as the Ural Mountains, though not to occur in Siberia. Ménétries observed it in Caucasia and De Filippi in Western Persia. Mr. Hume has received it from several parts of the Punjab. Strickland observed it to be common at Smyrna in winter, and it is said to be resident in Greece, but in Palestine and Egypt it is a bird of passage on its way to and from its winter-quarters in Arabia, Abyssinia and Kordofan. Mr. Chambers-Hodgetts observed it in Tripoli, and it is common in Algeria, wintering in the oases. It also occurs in Morocco and specimens have been sent from Senegal, Gambia and even Fantee on the west coast of Africa. It visits Portugal and Southern Spain, but according to Mr. Howard Saunders is by no means common in the latter. Thence northward it is found throughout the rest of Europe included within the boundary sketched, but Dr. Borggreve notices the fact that it is very scarce and only breeds occasionally in that part of North Germany lying west of the Weser.

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* Linnæus says it goes to Spitsbergen, but no recent traveller confirms the assertion.

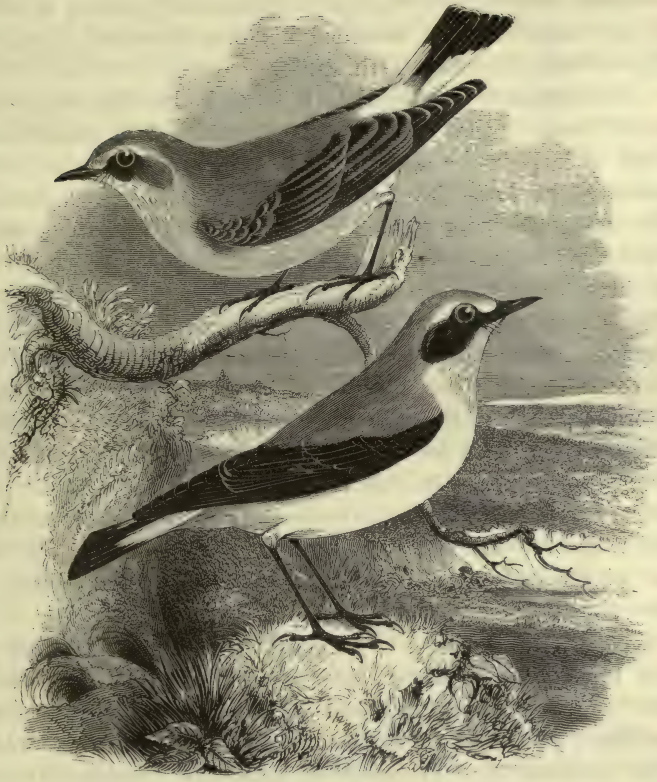
The male has the bill, which is thicker in this species than in the Stonechat, black; the irides brown: the lores, ear-coverts and a patch under the eyes dark brown; a streak of white extends from the nostrils over the eyes and ear-coverts; the feathers of the top of the head, neck, back and smaller wing-coverts very dark brown, with light buff edges, which are broader and tinged with rufous on the rump; greater wing-coverts black; the spurious wing white at the base, dark brown at the tip; the wing-quills dark brown, edged outwardly with buff, and the secondaries whitish at the tip; tail-feathers white at the base, dark brown above, and greyish-black beneath, on the distal half, and edged with pale brown. The chin and a line from thence reaching to the sides of the neck, white; throat and breast delicate fawn-colour, passing into pale buff on the belly and under tail-coverts. Legs, toes and claws black.

The whole length rather short of five inches. From the carpal joint to the end of the third and longest primary, three inches; the first feather very short; the second primary shorter than the fourth but longer than the fifth.

In the female, the colours generally are much paler, the white on the spurious wing is less conspicuous; and the body beneath has less of red and more of yellow in the tint.

The young have the line over the eyes reddish-buff, the spurious wing buffy-white at the base, and the edges of the body- and flight-feathers broader and more tinged with rufous.

Specimens from India and West Africa are said to be paler in colour than those from Europe.



SAXICOLA ŒNANTHE (Linnæus*).

THE WHEATEAR.

Saxicola œnanthe.

THE WHEATEAR, or Fallowchat as it is sometimes called, is one of the earliest of our summer-visitors, generally making its appearance about the middle of March, or sometimes even at the end of February, and remaining until the autumn. It has usually taken its departure from our island by the end of September, and from some parts of it at least a month earlier, but stragglers occasionally remain a little longer, and Sweet has recorded his observation of a pair in Hyde Park, November 17th, 1822.

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* *Motacilla œnanthe*, Linnæus, Syst. Nat. Ed. 12, i. p. 332 (1766).

In reference to its arrival in spring, the late Mr. Jonathan Couch remarks that in Cornwall "the Wheatear reaches our coast so early in the morning as to prove that it must have taken flight from the French coast long before daybreak. Few come after nine o'clock in the morning, and none after twelve. They sometimes perch on our fishing-boats, at two or three leagues from land, in an almost exhausted state. They do not cross the Channel every day; and as it usually happens that our own residents are not the first to arrive, it is common for them to abound in a morning; but in the afternoon, and for a day or two after, for not one to be seen." This observer does not think that the cock-birds precede the hens, as has generally been remarked of this and other migratory species, but he was, perhaps, misled by the fact that the Wheatear on reaching this country, has often not put off its winter-dress, which, as will presently be explained, is very similar in either sex.

These birds, arriving in numbers along the whole line of our southern and eastern coasts, soon disperse themselves over the downs, warrens and fallow lands, some of them seeking for a time very high northern latitudes, to be hereafter enumerated. They feed on grubs and various insects, some of which are taken on the wing, the bird returning to its former position on the turf or the top of a stone, but seldom alighting on a bush or twig. The lively gesticulations, no less than the delicate colouring of this bird, make it a welcome denizen of what remains to us of open country in England*.

The Wheatear begins to make its nest in the southern parts of our island by the middle of April, and for this purpose an underground lodging is almost invariably sought, whether it be a deep recess beneath some huge rock, a rabbit-burrow, the hole of a Sand-Martin in the bank of a pit, a crevice in some dry stone-wall, or the shelter of a clod in a fallow field. Mr. Dutton mentions (Zool. p. 9099) a nest built for several years in an old cannon. The bird never seems to excavate a place for itself, but merely furnishes any convenient retreat it may find with the materials it wants for its fabric—bents, fibrous roots, dried fern and moss forming the foundation, and feathers, rabbit's fur and wool, the lining. The whole is large and somewhat loosely put together, so as to be kept in shape rather by its confined position than by constructive skill. When the nest is in a rabbit-burrow it is not unfrequently visible from the exterior, but when under a stone it is often placed a long way from the entrance and out of sight. It can nearly always be found with certainty by watching the hen-bird, and Salmon says that on the large warrens of Suffolk and Norfolk its position is easily detected by the considerable number of small pieces of the withered stalks of the brake (*Pteris aquilina*) amassed at the entrance of the burrow. When the place of concealment, however, is beneath a rock or earth-fast stone, the nest is often inaccessible to the finder. The eggs, from five to eight in number, are of a very pale blue, sometimes with a green tinge, and occasionally marked with rusty dots; they measure from ·89 to ·77 by from ·68 to ·54 in. The same pair of birds nearly always produces two and sometimes even three broods in the season.

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* If the old saying "No May without a Wheatear" refers, as has been thought, to the bird, it is without point, for we have the bird with us every year from March to September. On the other hand, the wheat-plant no doubt comes into ear in the month of May, especially according to the Old Style of reckoning, sufficiently often to give rise to the adage.

The male sings prettily, but not loud, often when hovering on the wing, either near his nest or his partner. Sweet says that in confinement the Wheatear is continually in song, by night as well as by day, and that its winter song is the best and the most varied.

The well-known South Downs of Sussex are visited by the Wheatear from the end of July to the middle of September in vast numbers, consisting almost exclusively of the young birds which, having been bred in other parts of the country, or perhaps even further to the northward, are then pressing forward on their autumnal journey. Being at that time fat and of excellent flavour, these periodical emigrants are in great request as a delicacy among those who frequent the many watering-places on that coast.

The birds are chiefly supplied by the shepherds, who set traps for them on the downs over which their flocks graze. The Wheatear trap is formed by cutting an oblong sod of turf from the surface, about eight inches by eleven, and six inches thick, which is taken up and laid in the contrary way both as to surface and direction over the hole, thus forming a hollow chamber beneath. Besides this chamber, two other openings are also cut in the turf, about six inches wide and of greater length, which lead into the chamber at opposite ends, that the bird may run in under the turf through either of them. A small straight stick, sharpened at both ends, not very unlike a common match, but stouter, is fixed in an upright position a little on one side of the middle of the square chamber; the stick supports two open running loops of twisted horse-hair placed vertically across the line of passage from either entrance to the opposite outlet, and the bird attempting to run through is almost certain to get its head into one of these loops and be caught by the neck: upon the least alarm, even the shadow of a passing cloud, the birds run beneath the clod and are taken.

However inefficient these traps may appear to be from the description, the success of the shepherds is very extraordinary. One man and his lad can look after from five to seven hundred of them. They are opened every year about St. James's Day, July 25th, and are all in operation by August 1st. The birds arrive by hundreds, though not in flocks, in daily succession for the next six or seven weeks, probably depending on the distance northward at which they have been reared. The season for catching is concluded about the end of the third week in September, after which very few birds are observed to pass. Pennant, more than a century since, stated that the numbers snared about Eastbourne amounted annually to about 1,840 dozens, which were usually sold for sixpence the dozen, and Markwick, in 1798, recorded his having been told that, in two August days of 1792, his informant, a shepherd, had taken there twenty-seven dozens; but this is a small number compared with the almost incredible quantity sometimes taken, for another person told the same naturalist of a shepherd who once caught eighty-four dozens in one day. In Montagu's time (1802) the price had risen to a shilling the dozen, and it is now much higher, through the greater demand for and smaller supply of the birds*. Mr. Dutton, in 1864, stated that "where there were hundreds of dozens taken formerly, there are only a few dozens taken now." It would not appear, however, that the decrease is due so much to the numbers caught at this season of the year as to the breaking-up and bringing under tillage of thousands of acres of sheep-walk, down, heath, common and warren, which were the ancient nurseries in this country of this prolific species.

The diffusion of the Wheatear during summer over the British Islands is general, but it is a local bird—being restricted, in the breeding season at least, to the tracts of open country which, as just mentioned, are yearly diminishing in extent. It visits the Færoes and Iceland in some abundance, and has been known since the time of Otho Fabricius to occur in Greenland, where it breeds. From this inhospitable country it occasionally strays even further westward, and one was noticed, May 2nd, 1830, by Sir J. C. Ross flying round his ship in Felix Harbour, lat. 70° N. and long. 91° 53′ W., but was next morning found dead alongside. From Greenland also, many Wheatears on their southward migration seem to take too westerly a course, and, as Prof. Baird states, of late years the species has frequently been detected in the eastern portions of North America, but not further south than New York. He suggests that it may possibly breed in Labrador or Newfoundland, but Mr. Reeks did not observe it during his stay in the latter. It also occurs occasionally in the Bermudas, as recorded by Major Wedderburn, who states that one was shot there October 5th, 1846, and a second seen by himself and Colonel Drummond-Hay, in March, 1850.

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* During the meeting of the British Association at Brighton in August, 1872, Wheatears were sold by the poulterers for three shillings and sixpence the dozen.

The Wheatear is abundant on the European Continent, due regard being had to the kind of locality it affects, even to the neighbourhood of the North Cape, and, according to Pallas, it extends over the whole of Siberia, being most frequent about the Jenesei and beyond Lake Baikal, but according to more recent Russian authorities, not going much further eastward, though Prof. Sundevall states that it reaches Kamtchatka. Père David says that it breeds in the central mountains of extreme Ordo, north-west of Pekin. It occurs not unfrequently in the upper provinces of India, Jerdon having obtained it at Mhow, and Beavan at Umballa and Morar. It is said to be the most abundant of its class in all the plains of Persia. Mr. Abbott sent specimens from Armenia, and though, according to Dr. Krüper, it breeds in Asia Minor, in Palestine it seems to be only a bird of passage*. Mr. Tyrwhitt Drake obtained it in the peninsula of Sinai, and it is a regular winter-visitant to Arabia and North-eastern Africa, ascending the Nile valley, at least as far as Khartoum, where Dr. A. E. Brehm found it. Chambers-Hodgetts saw it in Tripoli. It is said to breed in Algeria, and it occurs on the west coast of Africa as far southward as Senegal and the Gambia. On the Canaries, according to Dr. Bolle, it occurs numerously in some winters, and Mr. Godman found it breeding in the western group of the Azores, where he believes it has only lately established itself.

The occurrence of this species in eastern North America as a probable straggler from Greenland has already been mentioned, but singularly enough, in the extreme northwestern part of that continent, the territory of Alaska, Wheatears would seem to be regular summer-visitants, and probably breed there*. The route by which these birds reach that country is at present unknown, as is also their winter retreat. It is enough to say that the species is unknown in British Columbia or any other part of Western America, and has never been recorded from Japan or the coast of China.

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* Syrian specimens have remarkably large bills, and have been separated as a distinct species, *S. rostrata*, Hempr. & Ehrenb.; but its validity is generally doubted.

The adult male in the breeding season has the bill black; the irides dark brown: the lores, a small line under the eyes and the ear-coverts, black, bounded above by a white line running from the bill over the eyes to the back of the head; the top of the head, neck, back and scapulars, of a fine light grey; wing-coverts and quills almost black, some of the feathers tipped or edged with buff; upper tail-coverts white, the two middle tail-feathers, with the proximal third white; the distal two-thirds black, the others with the proximal two-thirds white, the distal third black; all the lower surface of the body buffy-white, deepest on the throat and sides of the neck; axillaries and lower wing-coverts black, broadly bordered with white: legs, toes and claws, black.

In the adult female, during the breeding season, the lores are blackish, and the ear-coverts brown, the top of the head, neck and back are hair-brown, and the wing-coverts and quills dark brown; the rest being much as in the male.

The young, in their first plumage, are of a light greyish-brown above, the upper tail-coverts being white, though tipped with brown, and beneath of a pale greyish-buff clouded with brown. The marks on the sides of the head are indistinct, and the quills and upper wing-coverts less pure than in the adult.

Immediately after the breeding season, and before the birds leave this country, the annual moult takes place, the distinction of age and sex then being much less marked: the upper parts of the head and body are of a rich russet-brown, the feathers in the male, however, being grey at the base; the line over the eye is reddish-buff and the black on the sides of the head in the male disappears; the wing-coverts and quills are broadly edged with rufous-buff; the lower parts of the body are more deeply tinged with russet; the black of the lower wing-coverts is almost concealed by their broad, light edges, and the tail is tipped with buff.

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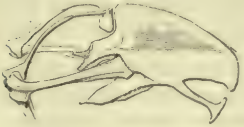
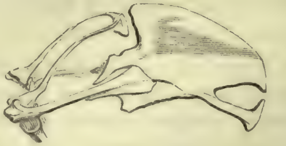
* Vigors long ago described the Wheatear of North-west America as a distinct species, under the name of *S. œnanthoides*, but nearly all ornithologists now agree in refusing to admit it as such; the differences between it and our ordinary bird being not greater than those observable in examples obtained in or much nearer to Europe.

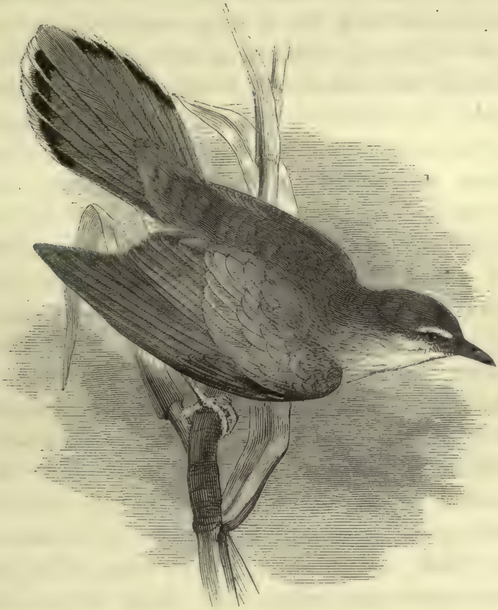
This plumage remains till the next moult; but in the following spring the change from the brown to the grey and black is effected by the wearing off of the brown tips and edges of all the feathers that were previously so coloured;—an illustration of one of the modes by which changes of appearance are caused. These brown fringes disappear from the quills of the wings before that colour is lost on the upper parts, on which the change is gradual, and many shades of difference may be observed, some birds changing more rapidly than others; but the change produced by the moult is rapid and general, affecting all alike.

The Wheatear varies very much in size. Of specimens examined by the Editor, those from Sinai are the smallest, and those from Greenland the largest, the difference between them in the length of the wing being nearly half an inch; but nearly as much is observable in examples obtained in this country. The whole length of an average English adult is six inches and a half. From the carpal joint to the end of the third and longest quill, three inches and seven-eighths: the second a little shorter than the fourth, but much longer than the fifth.

The vignette represents the breastbones of the Nightingale and the Wheatear.







Aedon galactodes (Temminck*).

THE RUFOUS WARBLER.

Salicaria galactotes.

Aedon, *F. Boie*†. — Bill long and strong, with the culmen curved and much compressed at the tip, hardly notched ; nostrils supernal, small and oval ; the gape without bristles. Wings with the first quill short, the second nearly as long as the third and fourth, which are longest. Tail long and rounded. Tarsi long, with broad scales in front. Toes short, the inner nearly as long as the outer, which are partly united to the middle toes at their base ; claws small.

For the knowledge of the first occurrence of this handsome bird in England, we are indebted to Mr. Borrer, who has already laid this work under many obligations by his communications, and in the 'Zoologist' (p. 4511) stated

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[*] *Sylvia galactotes* (by mistake), Temminck, Man. d'Orn. Ed. 2, i. p. 182 (1820).

[†] Isis, 1826, p. 972.

that on September 16th, 1854, Mr. Swaysland noticed at Plumpton Bosthill, about six miles from Brighton, a bird which he at first took for a cream-coloured variety of the Nightingale. Having obtained a gun, and returned to the spot, he found the bird about twenty yards from where he first observed it. It was very wary, flying always to the further side of some furze-bushes, and mounting into the air some fifteen yards, with a flight resembling that of the young of the Red-backed Shrike. He at last shot it. Mr. Borrer adds:—"The bird, on dissection, proved to be a male, and would shortly have moulted, one or two young feathers of the primaries having made their appearance on each wing: these are darker than the old ones. The feathers, also, on the back and tail, especially the central ones of the latter, are much worn. I borrowed the bird and sent it to Mr. Yarrell." It is now in the collection of Mr. Fuller-Maitland. In November, 1859, the late Mr. G. R. Gray recorded (Ann. and Mag. N. H. ser. 3, iv. p. 399) the occurrence of a second example. This was shot in September, 1859, a very strong south wind having prevailed for nearly a week previously, at the Start in Devonshire, by Mr. W. Llewellyn and given by him to the British Museum. The bird was not observed until it was shot, at which moment it was flying over a stone-wall, within an hundred yards of the sea. It was exceedingly thin and had lost its tail.

Although the beauty of this species might have been expected to attract and invite attention, its habits until of late were but little known. It seems to have been first indicated from a specimen obtained near Gibraltar, in the Leverian Museum, by Latham (Synopsis ii. pt. 1, p. 33) as a variety of the "Reed Thrush" to be presently mentioned; but its distinctness as a species was established by Temminck, who described specimens procured at San Roque and Algeciras by a brother of the celebrated Johann Natterer. This species does not seem to have been observed in France, and in Europe is chiefly confined to the eastern and western peninsulas. Mr. Gätke has noticed its occurrence in Heligoland, but that island and England, in the two cases just mentioned, are the only northern localities in which it has been obtained. It is common in Portugal, according to Prof. du Bocage, and is abundant in Southern Spain. A specimen in Mr. Gould's collection was obtained in Savoy, but Italian naturalists are silent as to its occurrence in their country or its islands, though Mr. Wright states that it has been several times taken in Malta. Dr. von Heuglin mentions an example in the Stuttgart Museum said to be from the Gold Coast, but at present no other evidence of its presence in West Africa is forthcoming. It breeds in Algeria, and the adult male, from Mr. Gould's collection, here figured and described, was shot in Tripoli. Though migratory in Egypt it is resident in Abyssinia and apparently in the Eastern Soudan. Birds from this part of Africa have been described as a distinct species, *Aedon minor*, but, as is now generally thought, unnecessarily. However, another species, *A. familiaris* (Ménétries) has been discriminated, the validity of which is reasonably maintained by Canon Tristram (Ibis, 1870, p. 496) and some authorities, though denied by others. This, according to Mr. Hume, goes as far as India, and its existence makes the limits of *A. galactodes* hard to trace. The latter, however, is said by the Canon to inhabit Palestine, Asia Minor and Greece, though the Strickland Collection contains specimens of *A. familiaris*, procured by that naturalist in the Morea in May, 1836. Whether it is the bird which occurs in Turkey is not known, but *A. familiaris*, originally described from Caucasia, is probably that found in Southern Russia and Persia.

Its food is said to be grasshoppers and other insects. It is a good songster. Mr. Salvin (Ibis, 1859, p. 309) remarks of it in Algeria, that it is shy and careful to elude observation. When it alights on a twig, it expands its tail, shewing the peculiar markings which terminate each feather, and, while holding it thus extended, it raises it once or twice. Though formerly grouped with the aquatic Warblers, marshy ground is not at all requisite for its residence, as he observed it frequently in an arid district; but it would seem to prefer a moister soil for its breeding-haunts. The nest is usually placed conspicuously in a tamarisk-tree, without attempt at concealment: one was found among the roots of a tree on a bankside, in just such a place as a Redbreast would choose. The materials employed are dead tamarisk-shoots for the outside, the inside and lining being usually feathers mixed with wool or camels' hair, and in nine cases out of ten a small piece of serpent's skin is placed loosely on the bottom of the nest. The fact last mentioned was also invariably noticed by Canon Tristram in Palestine (Ibis, 1867, p. 80) and has not yet been explained*; but it is remarkable that the same peculiarity has been observed by Mr. Theobald and Beavan (*tom. cit.* p. 445) in nests of an Indian species of *Thamnobia*, a genus near which *Aedon*, on other grounds, has been placed. In Southern Spain, according to Mr. Saunders, the nest is commonly placed in the hedges of cactus. The eggs are from three to five in number, curiously resembling those of the Tawny Pipit, to be hereafter described, being of a french-white, blotched with light ash-colour, and generally thickly freckled and streaked with hair-brown. They measure from ·9 to ·81 by from ·66 to ·59 in., and in Algeria are laid about the third week of May.

Originally taken for a species of Thrush, Temminck provisionally placed it among the aquatic Warblers, and, though afterwards withdrawn by him from that section, it remained there long enough to gain the very inappropriate English name of "Rufous Sedge-Warbler." In dropping the second word of this title, the Editor has to remark that it is not the "Rufous Warbler" of Latham; but, that term having been long disused, and custom rather than priority guiding us in the choice of vernacular names, the change here made may, it is hoped, be thought for the better. Further, it is quite impossible to keep this bird among the aquatic Warblers, however the genus may be termed. With the South-African *Erythropygia* (which is placed near *Saxicola* by some good authorities), if indeed that be separable, the *Thamnobia* already mentioned, and perhaps some other genera, it seems to form a small but distinct group of Warblers, and the example of nearly all modern ornithologists is followed by recognizing the existence of the genus *Aedon*.

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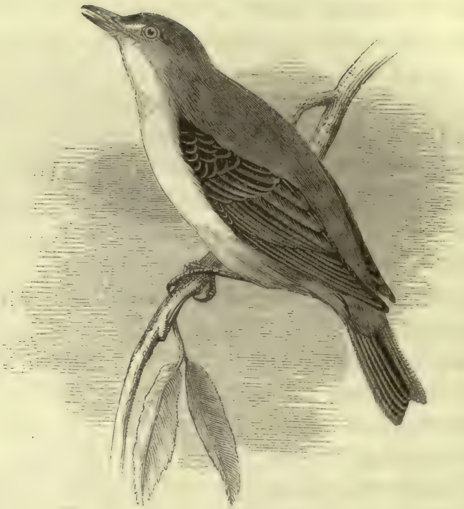
* In the absence of any other mode of accounting for this curious peculiarity, a conjecture may, perhaps, be hazarded. The Canon states with reference to this very species that, both in Palestine and in Algeria, he and his friends found the green lizards "provoking rivals in egg-collecting." Now if the bird thus suffers from the depredations of these reptiles it may use the snake's slough as a means of repelling them; for undoubtedly snakes often prey upon lizards, and the presence of the cast cuticle might well induce in the latter a belief that their enemy was lurking at hand—his vigour refreshed and his appetite sharpened by the moult he had just undergone.

The bill has the upper mandible brown above, its edges and the lower mandible being pale yellowish-brown; irides reddish-brown: over and under the eye, and passing backward over the ear-coverts, dull white; from the gape to the eye, a dark streak; head above, neck, back and wing-coverts, fawn-colour; primaries and secondaries, brocoli-brown; outer edges reddish-buff; upper tail-coverts and the two long middle tail-feathers including the shafts, uniform reddish-buff; the outer five tail-feathers on each side reddish-buff over two-thirds of their diminishing length, then a band of black extending over both webs, the remainder pure white; chin, throat, belly and lower tail-coverts, dull white; breast, lower wing-coverts and flanks, delicate fawn-colour; the tail beneath marked as above, but the colours not so bright; legs, toes and claws, pale wood-brown.

The whole length seven inches; from the carpal joint to the end of the third and longest quill, three inches and a half; the second quill about as long as the fifth.

It seems as if this species might generally be distinguished from the kindred *Aedon familiaris* by the lighter and more rufous tints of its upper parts, and especially by the coloration of the tail. In *A. galactodes* the two middle rectrices are, as has been said, of an uniform reddish-buff, while the outer tail-feathers are as above described. In *A. familiaris* the middle pair of tail-feathers are only reddish-buff on the proximal portion of the outer web, the whole of the inner and the distal part of the outer web being of a greyish-brown, with but a slight inclination to rufous, while the shaft is for at least half its length of the same colour, and on the outer feathers the black band is greatly increased and the white terminal patch diminished in breadth.



HYPOLAIS ICTERINA (Vieillot*).

THE ICTERINE WARBLER.

Sylvia hippolais.†

HYPOLAIS, *C. L. Brehm* ‡.—Bill stout, very wide at the base, the edges straight, somewhat compressed towards the tip, which is slightly emarginated. Nostrils basal, oblique, oval and exposed. Wings rather long and pointed, the first quill very short, the third usually the longest. Tail moderate, rounded, square or slightly forked. Legs with the tarsi short, the feet small, and the claws short but much curved.

ON the occurrence of this addition to the British Fauna, I was favoured by the late Dr. Plomley with the information that an example was killed at Eythorne, near Dover, June 15th, 1848, the person who shot it having been attracted by its extraordinary loud and melodious song. The specimen is now in the collection of Dr. Scott of Chudleigh, but

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[*] *Sylvia icterina*, Vieillot, Nouv. Dict. d'Hist. Nat. xi. p. 194 (1817).

[†] *Motacilla hippolais* (by mistake), Linnæus, Syst. Nat. Ed. 12, i. p. 330.

[‡] *Hippolais* (by mistake), C. L. Brehm, Isis, 1828, p. 1283.

through an unfortunate accident in a very imperfect condition. At a meeting of the Royal Dublin Society, January 30th, 1857, Dr. Carte, as noticed in the Society's 'Journal' (i. p. 440), announced the occurrence of a second British example of this species. This was shot June 8th, 1856, by Mr. J. G. Rathborne at Dunsinea, on the banks of the river Tolka in the county Dublin, and by him presented to the Society's Museum. Both this and the Kentish specimen before mentioned having been liberally entrusted to the care of Mr. Dresser, were exhibited to the British Association at Brighton, August 20th, 1872, and determined by him and several competent ornithologists then present, to be examples of the *Sylvia icterina* of Vieillot—a point, as will immediately be seen, of no small importance.

The species of the genus *Hypolais*, some six or seven in number, form a group of Warblers which, though in coloration so much like the Willow-Wrens as to have been frequently associated with them, differ a good deal in their general habits and entirely in their mode of nidification and the character of their eggs, while it must be allowed that structurally they closely resemble the Reed-Warblers, to which they seem to be most nearly allied. The present species, *H. icterina*, being also the *Motacilla hypolais* * of Linnæus, has for a long time and by many authors been confounded with another, *H. polyglotta*, though the differences between them, pointed out originally by Vieillot and afterwards by MM. Gerbe and Œillet des Murs, seem to be sufficiently valid. At the first glance the deeper and brighter yellowish tints of the former serve to distinguish it, and closer inspection will shew that it is larger and has a considerably longer wing, which extends beyond the middle of the tail; while in the Polyglot Warbler the wing does not reach so far as the middle of the tail. Again, the second primary in the Icterine Warbler is longer than the fifth, and equal or nearly equal to the fourth, which is shorter than the third, while in its ally the second primary is equal to the sixth, and the third and fourth are longest. In habits no doubt the two species are very similar, and with our present knowledge of them it is perhaps premature to attempt a definition of the geographical range of each. The Icterine Warbler, however, would appear to be the more eastern as well as the more northern bird of the two. Prof. Sundevall has received it from Egypt. Strickland procured it in Zante, and Mr. Wright has sent it to Mr. Dresser from Malta, as did Seidensacher from Styria. It is very common in most parts of Germany, Holland, Belgium and northern France. It goes to Denmark, Sweden and Norway, in which last Messrs. Godman obtained it so high as Bodö. The true Polyglot Warbler, on the other hand, seems not to occur in Germany, but it is met with in Southern France. Mr. Saunders found it abundant in Spain and Mr. Dresser has received it from Tangier. In a few years naturalists will no doubt have a far clearer idea of the relative distribution of the two birds.

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* Linnæus, indeed, as quoted in the last foot-note but one, wrote *hippolais*, following what was perhaps originally the chance mistake of some old writer—a mistake that has been widely copied. Bonaparte seems to have first pointed out that the vulgar spelling was wrong. There can be no doubt about the orthography : ὑπολαΐς and ἐπιλαΐς are two birds mentioned by Aristotle ; the first, probably so called from its creeping under stones and being the common nurse of the Cuckoo, was most likely the Hedge-Sparrow ; the second, from its settling upon stones, was, Prof. Sundevall thinks, the Wheatear.

The food of the Icterine Warbler consists chiefly of various caterpillars and small insects, some of which it catches on the wing. It is a summer-visitant to Europe, and inhabits indifferently thickets in wet situations, gardens and orchards. Its song is remarkably fine. Rennie, the first British author to give an accurate account of this species from his own observation (Field Naturalist, i. p. 46), is loud in praise of the rich intonation and multitudinous variety of its notes*, and well remarks that it would be impossible for so fine a songster which haunts gardens to occur in this country without revealing its presence. In Mr. Hewitson's opinion too, its carol is the sweetest he has ever heard, equalling if not surpassing that of the Nightingale. According to Baron de Selys-Longchamps (Rev. Zool. 1847, p. 122), who has had ample opportunities of studying the habits of the Icterine Warbler near Liège, and even within the bounds of that city—where the smallest garden is yearly frequented by a pair, the notes of the cock imitate those of several birds: its song somewhat resembling that of the Marsh-Warbler, to be presently mentioned (p. 373), but being more lively and gay, while it also mocks the Greenfinch, and its other cries counterfeit those of the Swallow, the Golden Oriole, the Woodchat, and the alarm-note of the Willow-Wren.

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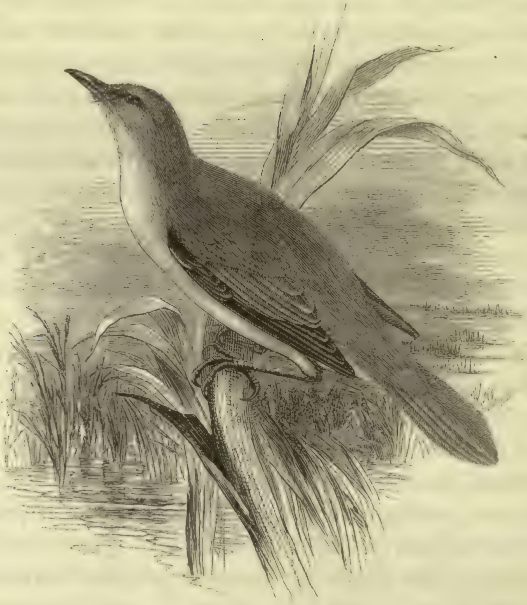
* He, however, though clearly distinguishing it from the Chiffchaff, with which it had, by a misapplication of the specific name *hypolais*, been often confounded, erroneously took it to be the *Sylvia polyglotta* of Vieillot, who, for his part, also supposed that his *S. polyglotta* was the *S. hypolais* of Bechstein.

The nest is open and cup-shaped, built at the height of several feet from the ground in a forked bough, and, though with very thick and substantial walls, is remarkable for the lightness of their component materials. One, described by Mr. Hewitson, is formed chiefly of umbelliferous plants and fine dry grass, strongly bound together by a quantity of wool, mixed with fine shreds of birch-bark and bits of moss, the lining being of the flowering stems of grasses, without their seeds, very fine roots and a few hairs. The eggs, five or six in number, are very constant in colour and markings, being of a dull brownish-pink with spots and specks of dark purplish-brown, almost black. They measure from ·77 to ·65 by from ·55 to ·5 in., an exceptionally small one being only ·47 by ·41 in.

The bill is brown above, the lower mandible yellowish: irides brown: from the nostrils a yellow streak passes over each eye; top of the head, neck, scapulars, upper wing-coverts and back, greyish-olive; quills ashy-brown, with light external edges, those of the tertials broad and distinctly tinged with pale yellow; chin, cheeks, neck and all the lower parts lemon-yellow; legs and toes slate-colour; the soles yellow. The female is generally paler than the male; and the young have the yellow parts of a lighter hue.

The whole length five inches and a quarter; the wing, from the carpal joint, three inches and one eighth. The relative proportion of the primaries has already been stated.



Acrocephalus arundinaceus (Linnæus[*]).

THE GREAT REED-WARBLER.

Salicaria turdoïdes[†].

Acrocephalus, *J. A. Naumann*[‡].—Bill more or less straight, with the culmen elevated, wide at the base, compressed towards the tip, and slightly emarginated; the edges of the lower mandible inflected; nostrils basal, oblique, oval and exposed. Forehead narrow and depressed. Wings rather short; the first quill nearly abortive, the second commonly shorter than the third, which is generally longest. Tail rounded and rather long. Legs long; feet large and stout, the hind toe strong; claws long and moderately curved.

We are indebted to Mr. John Hancock for this addition to British ornithology, announced by him in the 'Annals and

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[*] *Turdus arundinaceus*, Linnæus, Syst. Nat. Ed. 12, i. p. 296 (1766).

[†] *Sylvia turdoides*, B. Meyer, Vögel Liv- und Esthlands, p. 116 (1815).

[‡] Naturgeschichte der Vögel Deutschlands. Nachtr. p. 201 (1819). This reference is given on the authority of J. F. Naumann (Vög. Deutschl. Ed. 2, iii. p. 597), as the Editor has been unable to consult a perfect copy of the older work.

Magazine of Natural History' for August, 1847 (vol. xx. p. 135), as follows:—

"A male specimen of this fine Warbler was shot, three or four miles west of Newcastle, near the village of Swalwell, by Mr. Thomas Robson of that place, on the 28th of last May. The attention of this gentleman, who is perfectly familiar with the song of all our summer-visitants, was arrested by a note which he had not before heard; and after some search he succeeded in getting a sight of the bird. It was concealed in the thickest part of a garden hedge close to an extensive mill-dam, which is bordered with willows, reeds and other aquatic plants. It would scarcely leave its retreat, and when it did so never flew far, and always kept close to the herbage." This specimen, as Mr. Hancock has kindly informed the Editor, is now in the possession of Mr. Thomas Thompson of Winlaton, near the place where it was shot*. According to Mr. Morris, who, however, has attributed the foregoing as well as another reputed instance of the occurrence of this species to the larger Nightingale of eastern Europe, before mentioned (page 320), an example of the present bird was killed, May 4th, 1853, at a pondside near Sittingbourne in Kent by Mr. G. Thomas.

Two other examples were said in the last Edition of this work to have been also killed in Kent, one between Tonbridge and Sevenoaks, the other at Erith; and a third is stated (Zool. p. 4014) to have been obtained June 16th, 1853, at Dagenham in Essex. All these came into the possession of the late Mr. Green, a well-known dealer in birds and eggs, but they were shewn when in the flesh to competent judges, and there seems no reason to doubt their having been specimens of the Great Reed-Warbler or Reed-Thrush, to use its oldest English name. Mr. Gould, however, in his 'Birds of Great Britain,' utters a warning respecting them which should not be neglected, stating that to his knowledge freshly-killed examples of this species are often sent from Rotterdam, that there is accordingly reason to think that it may not have been obtained in this country so often as has been supposed.*

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* Mr. Newman (Zool. p. 3476) mentions, under the name of *Sylvia turdoides*, a bird, said to have been shot near Dartford, May 8th, 1852, which he examined in a fresh state, but he has since stated (Dict. Brit. Birds, p. 374) some facts rendering it probable that the specimen was so called by mistake.

Mr. Hancock, in the communication already in part cited, goes on to say that he had little doubt the bird shot in Durham (which, it may be remarked, is perhaps the most northern locality ever recorded for the species) was breeding in the neighbourhood, and mentions his having received from Northamptonshire, nearly two years before, an egg unquestionably belonging to the Reed-Thrush. This egg, he has since informed the Editor, came from a collection formed by the late Mr. Wheelwright, but it was unaccompanied by any positive information as to where it was taken. Eggs from the same source are in the collection of Mr. Bond, who has also stated that he has some others, believed to have been taken in Hertfordshire. In the last Edition, too, of this work, mention was made of a nest belonging to Mr. Butterfield, and said to have been found near Dorking. Those who have formed an acquaintance with this bird in its haunts will not readily credit the supposition that it can breed in this country or often visit us unnoticed, and the fact is remarkable that in none of the cases cited do the finders of these reputed nests seem to have been struck by the bird's loud song and harsh cries of alarm.

In habits the present species almost exactly resembles its commoner congener next to be described. Both frequent much the same kind of locality, and their nests, except in size, are almost exactly similar. The eggs of the Great Reed-Warbler are four or five in number, measuring from ·94 to ·84 by from ·65 to ·61 in., and are usually of a very pale greenish-blue, blotched and speckled with ash-grey, reddish-brown and very dark olive: sometimes the whole ground-colour has an olive tint.

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* In the 'Naturalist' for August, 1838 (iii. p. 419), Mr. Blyth states that a season or two previously Mr. Bartlett obtained in the London market a recent specimen of this species, which fact possibly indicates that the practice of importing fresh examples from abroad has not been confined to the last few years.

Referring to the best authorities, we find that this bird, though common in the south of Europe, yearly breeds in the northern departments of France, even as near to us as Calais. It is well known in Belgium, and is abundant in most parts of Holland, where it arrives about the beginning of April. It has occurred in Heligoland, and is an annual visitor to Holstein, breeding near Kiel, and, indeed, it may be said throughout Europe generally south of the Baltic. Pallas mentions it being very common about Astrakan, and Ménétries says it is not rare near Lenkoran, but there is no evidence of it further eastward*. In the Holy Land its note is said to be heard from every cane-brake, and there, says Canon Tristram, the bird seems to have two distinct forms, one darker and larger than the other †. Dr. von Heuglin gives it as an occasional winter-visitant to Lower Egypt, and adds that Dr. A. E. Brehm found it on the Upper Blue Nile in January. It is said to occur in Tripoli, and it breeds abundantly in Algeria, where, says Mr. Salvin, its song may be heard incessantly night and day. Dr. Hartlaub states that it has been sent from the Gaboon to the Paris Museum, and it is said to have been obtained by Andersson in Damaraland ‡.

The whole length of the adult male is nearly eight inches; the wing from the carpal joint to the tip, about three inches and a half: the bill brown, the lower mandible yellow at the base and underneath to the tip; irides brown: a line of dirty white, in some specimens tinged with yellow, from the nostrils over the eyes; top of the head, cheeks, ear-coverts, neck, back, wings and upper tail-coverts uniform light brown; primaries, secondaries, and tail-feathers darker, with light edges; the tail graduated, the middle pair of feathers nearly half an inch longer than the outer pair. Chin, throat and breast, dirty white; belly, vent, flanks, axillaries and lower wing-coverts, delicate fawn-colour; primaries and tail-feathers greyish-brown beneath, the shafts of the latter white: legs light brown; toes and claws darker; tarsi with several scales in front. The second wing-quill nearly as long as the third and longer than the fourth.

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* In China, Japan, and some islands of the Malay Archipelago it is represented by *Acrocephalus orientalis*, in India by *A. brunnescens*, and in Australia by *A. australis*, all more or less nearly-allied species, but apparently always distinguishable.

† One of these may possibly be the *A. arabicus* recently differentiated by Dr. von Heuglin.

‡ In South Africa another allied species, *A. caffer*, is believed to exist, and it is possible that this was the bird obtained.

In breaking up the great genus *Sylvia*, the Warblers of aquatic habit have been generally separated from the rest, and most authors in this country have used for them the generic name *Salicaria* proposed in 1833 by Selby; but he had been anticipated in this division by F. Boie, who in 1822 (Isis, x. p. 552) founded a genus *Calamoherpe*, the type of which is the species next to be described, and absolutely congeneric with the present: the name *Acrocephalus*, however, said to have been conferred by the elder Naumann in 1819, takes precedence of both these, and is accordingly here adopted*. Other subdivisions have since been established, with more or less show of reason, but it is here thought advisable to retain all the British aquatic Warblers in one genus, as was done in former Editions of this work.

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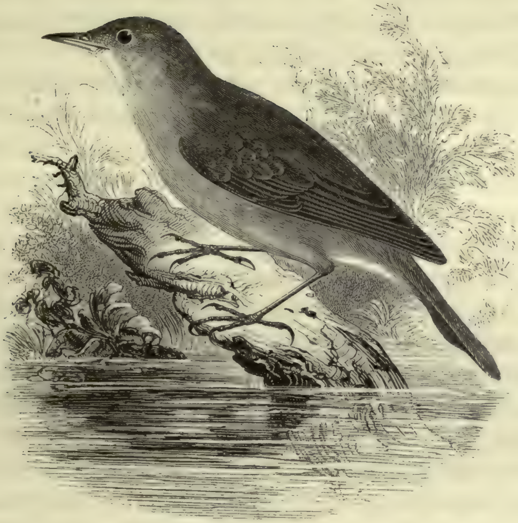
* *Calamodyta* has been employed by several writers for the genus under the belief that it was conferred by Bernhard Meyer (Vög. Liv- und Esthl. p. 116) still earlier, in 1815. In its plural form it was certainly used by him then and later for the group of aquatic Warblers, but not in a generic sense, as shewn by his using *Saxicolæ* for the Rock-Thrushes, just as he uses *Calamodytæ* for the aquatic Warblers, while he keeps the former under *Turdus* just as he puts the latter under *Sylvia*, and yet adopts Bechstein's genus *Saxicola* for the Chats.



ACROCEPHALUS STREPERUS (Vieillot*).

THE REED-WARBLER.

Salicaria arundinacea†.

THE REED-WARBLER appears to have been first clearly distinguished by the late Mr. Lightfoot, who, in a letter to Sir Joseph Banks, dated "Uxbridge, Nov. 20, 1783," read November 17th, 1784, before the Royal Society, and printed in its 'Transactions' for the following year, well described the habits, plumage and nest of this species, which he found frequenting the reeds of the river Colne at Denham in Middlesex. The nest and eggs had also been sent to him from Dartford by Latham, who did not know the bird to which they belonged*. In 1802 the species was admitted by Montagu to his 'Ornithological Dictionary,' and said to have been also found by him along the coasts of Kent and Sussex from Sandwich to Arundel.

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* *Sylvia strepera*, Vieillot, Nouv. Dict. d'Hist. Nat. xi. p. 182 (1817).

† *Motacilla arundinacea*, Lightfoot, Phil. Trans. lxxv. p. 11 (1785); but not *Turdus arundinaceus*, Linnæus (1766), which, being strictly congeneric, is entitled by priority to this specific name.

The Reed-Warbler comes to this country late in April and leaves us in September. Like many others of our summer-migrants, it is more common on the eastern than on the western side of England, and it seems not to breed in Devon or Cornwall; in the last county, indeed, it is only known with certainty to have occurred as a straggler, and that but once, in the autumn of 1849, when several were taken in Scilly. According to the latest information collected and kindly furnished by Mr. More, it is doubtful whether the Reed-Warbler regularly extends further to the north-west than Staffordshire † or Derbyshire, though it reaches Scarborough on the east. In Scotland it has been found breeding in East Lothian by Mr. Hepburn, and in West Lothian by Mr. Weir. In Ireland one is said to have been seen by Templeton near Belfast, and a male was shot by Mr. Montgomery at Raheny, near Dublin, December 21st, 1843—the date shewing that the bird must have been a vagrant. The range of the species, therefore, in the British Islands is much less wide than that of the Sedge-Warbler, next to be described, and it is far more local and generally scarcer where it does occur than that bird. Though reed-beds form its chief haunts, they are not its only resort, for it is not unfrequently found, and it even breeds, in places at some distance from any such growth, or from water itself. Yet its partiality for reeds, where they exist, and the habit it has, in common with its larger congener, of usually suspending its remarkable nest among their stems make the names of Reed-bird or Reed-Wren, by which it is commonly known, sufficiently applicable. By no English writer have its habits been better described than by Mr. Stevenson in his 'Birds of Norfolk,' and probably in no part of England is it more plentiful than in the district of the Broads, of which he has given so pleasing a picture. It is an incessant songster, heard at short intervals throughout the day, except in windy weather, but most lavish of its music in the twilight hours of a midsummer's night. Its varied notes, loud and hurriedly delivered, some of them mocking those of other birds, but others peculiarly its own, form a melody far more harmonious than the Sedge-Warbler's, being less interrupted by the harsh twittering which mars the song of that species, though there is undoubtedly a considerable likeness between the vocal performance of each. Sweet, well known for his skill and success in keeping the soft-billed birds in confinement, possessed a Reed-Warbler which sung occasionally throughout the winter. The food of this species consists of worms, fresh-water mollusks and various insects, including, according to Mr. Jenyns, the smaller species of dragon-flies.

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* As Lightfoot observes, the bird, nest and eggs had been figured in Sepp's 'Nederlandsche Vogelen,' but the two last were therein attributed to the Greater Whitethroat, which is represented as their owner, while the Reed-Wren is accredited with eggs that certainly do not belong to it.

† Messrs. Armitage and Ley, however, state (Trans. Woolhope Club, 1869, p. 73) that in Herefordshire the Reed-Wren is only seen in the northern and eastern portions of that county.

The nest of this bird is very beautifully constructed and sustained. That from which the vignette was drawn, was supported between four reed stems, and was taken from a reed-bed on the Thames, the surface soil of which was covered by water every tide. The nest is made of the seed-branches of the reeds and very long grass, mixed with a little wool, and wound horizontally round and round, so as to include in the substance the upright reeds or twigs, when built, as not unfrequently is the case, in a bush. It measures some five inches in depth outside, three inches across the top, and often three inches in depth inside; the lining is formed of very fine grass and long hairs. The nest is so deep that the eggs do not roll out when the supporting reeds are waved by the wind; and Montagu and others have observed the bird sitting on her nest when every gust forced it almost to the surface of the water. The eggs, four or five in number, are of a greenish-white, sometimes very pale, clouded, blotched, spotted or freckled with dark olive and occasionally ash-colour, the markings being usually confluent, but sometimes few in number and well defined, shewing the light ground, which in such cases is often also spotted with light brown: a few black spots are also sometimes present. The eggs measure from ·77 to ·68 by from ·57 to ·49 in., an exceptionally small one only ·58 by ·45 in. The young are hatched in July, and quit the nest very soon, hanging and climbing with perfect security among the reeds by their very sharp claws. In some districts this species is the most common victim of the Cuckow's parasitical habit.

The Reed-Warbler is found in the west and south of Sweden, according to Prof. Sundevall; it is common in Denmark, Germany and Southern Russia*. De Filippi noticed it at Helenowko, and Dr. Krüper is said to have met with it in Asia Minor†. In Palestine, where it appears to be an early spring-migrant, Canon Tristram says it is very common. It occurs, according to Dr. von Heuglin, in Arabia, Nubia and Egypt as a winter-visitant. It is said by Loche to breed in Algeria, but the English ornithologists who have explored that country do not seem to have met with it at all. Mr. Saunders obtained it in Southern Spain both in winter and spring, and believes it breeds there, while Prof. du Bocage says that it is found frequently in Portugal. Throughout the rest of Europe it occurs in suitable localities.

The bill is longer than that of the other four birds of this group to be presently described, and rather broader at the base, the upper mandible dark horn-colour, the lower light and inclining to yellow at the base; the irides light yellowish-brown: a line of pale buff from the nostrils over each eye; head, neck and all the body above, nearly uniform pale brown with a tinge of chestnut, particularly on the rump; the quills dusky, but edged outwardly with the same brown as the upper parts; tail rather long, the outer pair of feathers a quarter of an inch shorter than the middle pair: chin, throat and belly white; breast, flanks and under tail-coverts, a very pale buff, darkest on the flanks. Legs, in the type-example described by Lightfoot, light olive, soles of the feet bright yellow, with a tinge of green which soon fades; but in examples especially procured by the Editor for the use of this work, the legs were of a purplish-brown, and the soles dusky.

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* A nearly allied, if indeed distinct, species has been described, under the name of *Sylvia magnirostris*, by Prof. Lilljeborg from Northern Russia. The Editor has not seen a specimen, but it seems as if it might possibly be identical with Herr Malm's *Calamoherpe media*, obtained near Gottenburg.

† In India, our Reed-Warbler is represented by *Acrocephalus dumetorum*, which Mr. Blyth maintains, and as it would seem with reason, to be distinct, though some authors regard the two as identical.

The length of the male bird five inches and a half. From the carpal joint to the end of the wing, two inches and five-eighths: the second, third and fourth primaries nearly equal in length, the third the longest.

The female resembles the male, but is rather less in size.

The Marsh-Warbler, *Acrocephalus palustris* (Bechstein), is said to have occurred several times in England*, and some of the examples on which the statements rest have been kindly submitted by their owners, Mr. Bond, Mr. Harting and Mr. Sharpe, to the Editor. It is confessedly hard to distinguish between prepared specimens of two species so much alike as *A. streperus* and *A. palustris*, and it is with some diffidence that, after a careful examination, he has come to the conclusion it is at present premature to admit the latter as a British bird. In thus resolving, he, however, throws no doubt on these examples having been obtained in this country; but what does seem uncertain, after a diligent investigation of the alleged distinctive characters of each species put forth by various writers, is whether these two species, except in life and shortly after death, can be surely distinguished, and consequently whether the slight peculiarities of the British specimens attributed to *A. palustris* prove that they have been rightly so assigned.

Mr. Harting, who has taken great pains with the question, and is satisfied that *A. palustris* not only occurs in England, but is probably an annual summer-migrant to our shores, has obliged the Editor with the following remarks on a comparison of the two species:—

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* Mr. Harting, in his new and useful 'Handbook of British Birds' (p. 104), refers to six such instances.

"Although the colour of the upper portion of the plumage in both is an uniform olive-brown, *A. palustris* is yellower. It is a somewhat longer bird, with a shorter and broader bill; a buffy-white line, extending from the base of the bill over the eye, is clearly defined. In *A. streperus* this line is so faint as to be scarcely discernible. In *A. palustris*, the second primary is equal in length to the fourth, while in *A. streperus* it is equal to the fifth. It is doubtful whether this can be invariably relied upon, for the length of feathers, even in the same species, will sometimes vary considerably, through age, moult or accident. The tail in *A. palustris* is less rounded than in *A. streperus*, the outer feather in the former being not so short as in the latter.

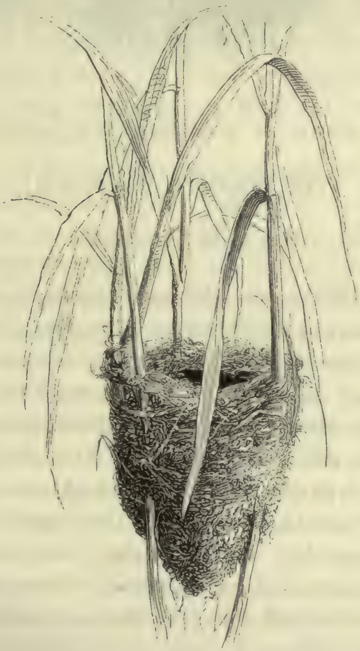
"The measurements of the two species, taken from skins, are as follows:—

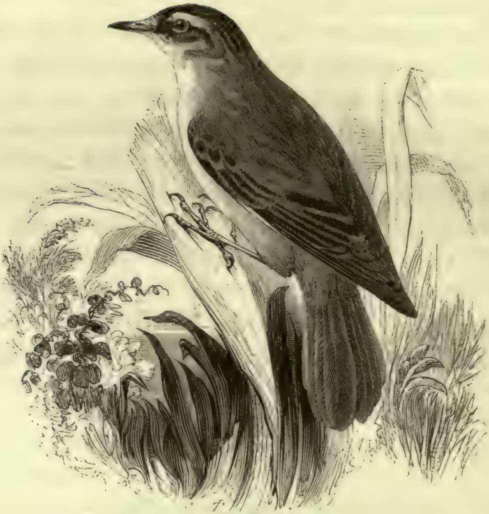
	Length.	Bill.	Wing from Carpus.	Tarsus.
" *A. streperus* .	5·3	·55	2·7	·8
" *A. palustris* .	5·5	·5	2·5	·9

"The readiest means of distinguishing the two birds at a glance is by the colour of the legs and toes. In living or freshly-killed specimens it will be observed that the tarsi and feet of *A. streperus* are of a slaty-brown, while in *A. palustris* the same parts are flesh-colour. In dried skins, the former turns to hair-brown; the latter to yellowish-brown. The tarsus of *A. palustris*, moreover, is rather longer and stouter than that of its congener."

It must be remarked that other writers give a somewhat different account of the outward distinctions of the two birds, and the colour of the legs, upon which Mr. Harting most relies, especially seems to be a doubtful characteristic. Many if not most British authors, state that the legs of the Reed-Warbler are light coloured, and, if their descriptions have been made from specimens and not copied, it is not only clear that birds with light-coloured legs (that is, in Mr. Harting's opinion, Marsh-Warblers) are not at all uncommonly met with, but also that the original *Motacilla arundinacea* of Lightfoot was one.

The Editor must add that he does not charge with want of caution those writers who have unhesitatingly admitted the Marsh-Warbler as a British bird, he can only lament that his own power of discrimination is so inferior to theirs. If, before investigating the subject, he had any prepossession at all, it was in favour of the occasional appearance of the bird in England; but since, according to the ornithologists who have studied both species in life, it differs so strikingly in song and habits from the Reed-Warbler, it is manifestly unlikely to occur often in this country without its presence being speedily remarked by our numerous out-of-doors observers.





ACROCEPHALUS SCHŒNOBÆNUS (Linnæus*).

THE SEDGE-WARBLER.

Salicaria phragmitis†.

THE SEDGE-WARBLER, the next example of this aquatic division, is more numerous as a species than any of the others, and is generally to be found during summer in most thick patches of sedges or willows in marshes, or on the low sides of rivers, where, from the nature of the soil, aquatic herbage grows thick and strong. The Sedge-Warbler, or Sedge-bird (to use one of its oldest and commonest English names), is a summer-visitor to this country, arriving in April and departing in September; but occasionally examples have been observed in winter. Most generally on its arrival it takes to thick covert by the water-side, and is much more frequently heard than seen; though, with patience, it may be observed flitting on the uppermost twigs of the bushes it inhabits, giving rapid utterance to a succession of notes as it flies from one branch to another. Pennant, aided by White of Selborne, between 1766 and 1769, discovered this species in England, though both seem to have erroneously referred it to the "Lesser Reed-Sparrow" of Ray (Synops. Av. p. 47), which is probably the Reed-Wren; but White with his usual acuteness described correctly the habits and appearance of the bird, particularly remarking its power of imitating the notes of other species, and its singing at night. Later observations in various localities have confirmed the accuracy of his remarks; and the cock Sedge-Warbler may be heard throughout the day and frequently during a summer's night, imitating the notes of various birds in a somewhat confused and hurried manner: should he desist for a few minutes' rest, it is only necessary to throw a stone or a clod among the bushes, and he will immediately commence a series of repetitions, but seldom quits his covered retreat.

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* *Motacilla schœnobœnus*, Linnæus, Syst. Nat. Ed. 12, i. p. 329 (1766).

† *Sylvia phragmitis*, Bechstein, Ornithologisches Taschenbuch, i. p. 186 (1802).

The nest of the Sedge-bird was formerly often confounded with that of the Reed-Wren; but, as is now well known, it is usually placed much nearer the ground, is built in a very different fashion, and does not depend on reeds for its support, being commonly placed at or near the bottom of a patch of thick, coarse herbage. It is generally composed externally of moss at the bottom; while the walls are of grass and coarse bents; and the inside, which is rather deep, is thickly lined with hairs; but some nests are lined with portions of umbelliferous plants. The eggs are five or six in number, measuring from ·74 to ·67 by from ·55 to ·48 in., but one from a nest in which all were of about the same exceptional size measures only ·52 by ·37 in. They are of a pale yellowish-brown, generally suffused or clouded, but sometimes slightly mottled with darker brown, and not unfrequently streaked with short hair-like lines of black. They are hatched at the end of May or early in June.

The marshy banks of nearly every river or stream in the three kingdoms, where beds of willows, rushes or reeds abound, are more or less well stocked with this bird; and it is found also where similar vegetation grows around the sides of lakes and even small ponds, as well as on wet commons and fens covered with sedge. On its first appearance in this country it will often for a time haunt dry places, such as broom-coverts, young plantations and even hedgerows, if they possess a thick undergrowth of long grass; but it is not known to build its nest in such spots or at any great distance from water. It breeds regularly in every county of Great Britain, and, according to Thompson, is in Ireland a regular summer-visitant from south to north. Mr. R. Gray says that it occurs sparingly in the isles of Mull and Islay, and may probably be found in Skye, but that it does not visit the Outer Hebrides. In Norway it ranges up to lat. 70° N., and Pastor Sommerfelt thinks it may possibly reach East Finmark. In Sweden its distribution is less extensive, but Herr Meves says it was shot at Muonioniska in June, 1832, by Stenius, and Wolley obtained it at Muoniovara in August, 1855, though according to Prof. Sundevall it becomes rare even near Upsala and Stockholm. It is found in the south of Finland and thence across to the Ural mountains. How much further to the eastward it goes cannot yet be determined, for it would seem that Pallas's statements as to its occurrence in Siberia may wholly or in part refer to a distinct species. It is found, however, in the south of Russia, and is recorded from the Caucasus by Ménétries, though the specimens obtained there by him presented some slight variations. It also occurs in Asia Minor, Strickland having seen it at Smyrna in December; and it is very common in Palestine, where it arrives in March. Captain Shelley found it plentiful in Egypt in winter, and Dr. Von Heuglin shot many in March on the Sobat River, an affluent of the White Nile. Andersson obtained examples in Damaraland, which Mr. Gurney says are identical with English specimens. According to Loche it occurs in Algeria. Mr. Saunders saw it near Malaga in winter, but thinks it does not breed in southern Spain. In almost all the rest of Europe it is a well-known summer-visitant, but in North Germany, though generally distributed, Dr. Borggreve says it is not very common.

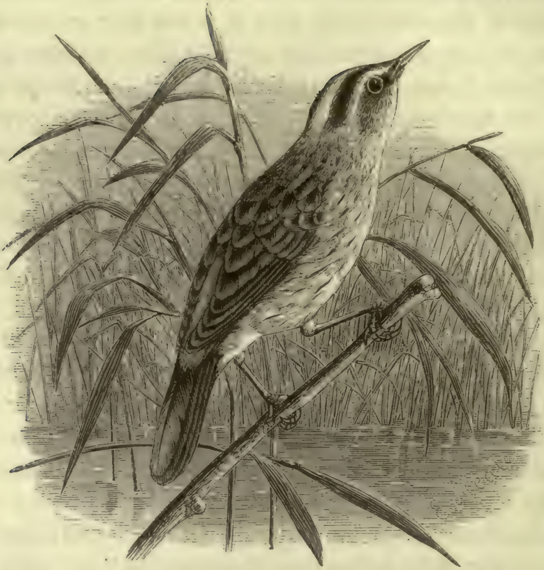
Worms, slugs, and various aquatic insects form the chief food of the Sedge-bird, but Naumann states that in autumn it will eat elder-berries. From what has been above said of its haunts, the reader may gather that in many places it is one of the angler's most constant companions; and, when sport is slack, its loud and merry song, with all its varied breaks and interludes, seems to mock man as well as its fellow-birds. Many of its notes, however, are very harsh, and the frequent repetition of one of these has gained for the species in some parts of England, particularly in the valley of the Thames, the name of "Chat," by which it is there mainly known.

The bill is dark brown, with the base of the lower mandible yellow: irides brown: lores and ear-coverts brown; from the nostrils a broad streak of yellowish-white passes backward on either side over the eyes and ear-coverts; the top of the head streaked longitudinally with dark and light brown, and thus mixed is darker than the nape, forming a cap; back and wing-coverts pale reddish-brown clouded with darker brown; rump and upper tail-coverts tawny; tail brown, with indistinct bars; wing-quills dark brown with light edges; wing-coverts and tertials broadly edged with pale brown; chin and throat white; breast, belly and lower tail-coverts pale buff; flanks bright buff; tail beneath dusky brown: legs, toes and claws, pale brown.

The whole length is four inches and three-quarters; but the tail in this and the species next to be described is comparatively short. From the carpal joint to the tip of the third and longest primary, two inches and a half: the second quill nearly as long as the third.

The female has the tail-coverts less rufous; and the whole of the lower surface, being mixed with dusky brown, is darker than in the male.

This species was generically separated from the other aquatic Warblers by Dr. Kaup, in 1829, under the name of *Calamodus*, and his example has been to some extent followed by ornithologists.



Acrocephalus aquaticus (J. F. Gmelin*).

THE AQUATIC WARBLER.

Sufficiently resembling the species last described to have been more than once mistaken for it, is the bird above figured. Yet the differences between them are plain enough when pointed out, and the Aquatic Warbler may be easily recognized by the prevailing yellow tints of its plumage generally and by the conspicuous light-coloured stripe which runs along the middle of its head.

The first example of this bird announced as having occurred in England was found by the Editor in the collection of Mr. Borrer, who certified that it was observed, October 19th, 1853, creeping about among the grass and reeds in an old brick-pit a little to the west of Hove, near Brighton; and that, having been shot, he saw it just after it had been skinned by Mr. H. Pratt of that town. The bird had been thought to be an unusually bright-coloured specimen of the Sedge-Warbler, but its real character being made plain, it was soon after, by Mr. Borrer's kind permission, exhibited, May 8th, 1866, at a meeting of the Zoological Society (Proc. Zool. Soc. 1866, p. 210). In the following year Mr. Harting recorded simultaneously in the 'Zoologist' (s.s. p. 946) and 'The Ibis' (1867, p. 469) the fact that he possessed a second British specimen of the species, which had been obtained near Loughborough in Leicestershire in the summer of 1864, and sent to him under the belief that it was a Grasshopper-Warbler, the species next to be included. In February, 1871, Mr. J. H. Gurney, junior, detected among the British birds in the Museum at Dover a third example of the Aquatic Warbler which the Curator, Mr. Charles Gordon, stated he himself had shot near that town, though his note of the date has been lost. Mr. Gurney has since pointed out (Trans. Norf. and Norw. Nat. Soc. 1871–72, p. 62) that the bird figured as a Sedge-Warbler in Hunt's 'British Ornithology' was undoubtedly of the present species, and accordingly that in all likelihood the Aquatic Warbler had occurred in Norfolk so long ago as the year 1815—but as no letterpress accompanies the plate, the supposition must always remain uncertain.

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* *Motacilla aquatica*, J. F. Gmelin, Syst. Nat. i. p. 953 (1788).

Considering that the ordinary geographical range of this species extends to the northern coast of France, the marshes near Dieppe being especially mentioned as a locality for it, and to the shores of Belgium and Holland—though in both the countries last named it is rare, the presumption that it is occasionally a voluntary visitor to this side of the Channel can scarcely be withstood, and its inclusion in the present work seems to be fairly defensible. Still there is no reason to think that it ever dwells among us, and as its habits are said to resemble very closely those of the Sedge-bird, a brief account of the species will suffice.

In its geographical distribution the Aquatic Warbler would seem to be much more limited than the Sedge-bird, and is perhaps a less eastern species. It has been noticed by Mr. Gätke as a straggler to Heligoland, and the Danish ornithologists say that it breeds in Sleswick; but in Holstein and the rest of North Germany it appears to be rare, and Dr. Borggreve states that only occasional occurrences of it in that country are recorded. It seems to be commoner in Silesia, but by all accounts is rare in Hungary and the Austrian Empire. Mr. Robson has procured it near Constantinople, and it is said to be found in Asia Minor. Canon Tristram, however, did not meet with it in Palestine, and, though Dr. von Heuglin states that it occurs in winter in Lower Egypt, Capt. Shelley suggests that he was mistaken in the determination of the birds seen by him. In the Cyclades and Greece it is said to be resident, and it visits Italy, Sicily and Sardinia. Mr. Salvin found it breeding in Algeria, and Mr. Drake procured it in Morocco in March. MM. Berthelot and Webb give it as occurring in Grand Canary, but Mr. Godman remarks that from the nature of the locality it cannot be common there. Mr. Howard Saunders has received specimens from Malaga, and Prof. du Bocage says that it is not rare near Coimbra in Portugal. In the south of France, according to MM. Jaubert and Barthélemy-Lapommeraye, it arrives towards April, and some individuals stay to breed in the Camargue; but most of them would seem to pass further to the northward, and, from what M. Gerbe says, we may infer that its distribution in France is very local. The same would appear to be the case in South Germany. Should the *Sylvia cariceti* of J. F. Naumann be, as is very probable, identical with the Aquatic Warbler, its range may be somewhat extended in several directions, but enough has been said on this score about a species which has but a slender claim to be regarded as British.

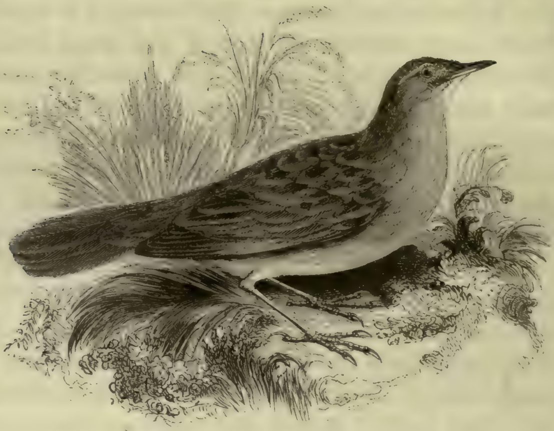
The nest is described as being very similar to that of the Sedge-Warbler, only somewhat smaller, and to be built in the same kind of place. The eggs have more resemblance to those of the Reed-Warbler, but are paler in colouring: a specimen in the Editor's possession, obtained by Canon Tristram in Algeria, measures ·67 by ·52 in.

The bill is dark brown, with the base of the lower mandible yellow: the lores and ear-coverts are brown; from the nostrils a stripe of pale yellow passes backward on either side over the eyes and ear-coverts; the forehead is reddish-buff mixed with dark brown; the top of the head dark brown with a median stripe of pale yellow extending to the hind head, and thus bisecting, as it were, the dark-coloured cap; the nape and sides of the head yellowish-buff, becoming more rufous on the back, rump, and upper tail-coverts, each feather of these parts having a dark median patch; the tail brown; wing-quills dark brown with light edges, wing-coverts and tertials broadly edged with pale brown; chin and throat white, passing into yellowish-buff and, uniting with the same colour on the sides of the neck, forming a gorget of which each feather bears a dark narrow median streak; breast, belly, and lower tail-coverts pale buff; the flanks yellowish-buff with dark median stripes, forming a continuation of the streaked gorget; tail beneath dusky brown: legs, toes and claws light yellowish-brown.

The whole length is about four inches and a half: from the carpal joint to the end of the third and longest primary rather less than two inches and a half.

The sexes seem to differ little in plumage, but the young are said to have the throat and breast more thickly spotted than the old birds.

The species so far described here under the generic name *Acrocephalus* agree in having short lower tail-coverts and the gape beset with bristles, while the two species of which an account is to follow have very long lower tail-coverts and no bristles at the gape. These structural characters, combined with some others that might be mentioned, point to a plausible division of the genus. Further, in their general coloration and their mode of nidification, the Reed-Thrush, Reed-Wren and Marsh-Warbler greatly resemble each other, and differ from the Sedge-bird and Aquatic Warbler. The name *Acrocephalus* therefore might be not without some reason restricted to the group containing the first three and their many foreign allies, while in that case the name *Calamodus* should be applied to the section including the last two, which seem to be generically quite inseparable.



Acrocephalus nævius (Boddaert*).

THE GRASSHOPPER-WARBLER.

Salicaria locustella†.

The Grasshopper-Warbler, so called from its very peculiar song, which resembles the incessant chirping noise made by some of the orthopterous insects—grasshoppers and crickets—is a visitor from the south, coming to this country for the summer, and is first to be heard or seen about the middle of April, leaving us again in September. In its habits, it is shy, vigilant and restless, secreting itself in the thickest vegetation, a patch of furze, a sedge-fen or a hedge-bottom, and creeping along for many yards in succession, more like a mouse than a bird; seldom going far from covert of some sort, and returning to shelter on the least alarm. Except on its first coming, when the cocks, awaiting the arrival of their mates, display themselves more than is their wont, it is at all times difficult and, in the breeding-season, when bushes and shrubs are clothed with leaves, almost impossible to obtain a sight of this bird; yet, when near its haunt, its note rings on the ear constantly, and, like that of other aquatic Warblers, may be heard about sunset particularly, and often during the night. The best time, however, for seeing the bird is when the first beams of the rising sun light up the landscape: the cock will then put off his skulking habits, and mounting to the top of the tallest twig or blade of sedge in his thicket, will for a while greet the friendly rays with his creaking strain. John Macgillivray truly remarks that this bird's "notes, if once heard, can never be afterwards mistaken for the sound of a grasshopper or cricket, however striking the resemblance; besides, the length of time for which it is continued, provided the bird be not disturbed, is much greater." He adds that on one occasion he heard its trill emitted for at least twenty minutes, during which time the bird appeared to have been sitting on the same spot. In the more marshy parts of England, where the chirping of grasshoppers and crickets is not a very common sound, this bird has long been known as the "Reeler"—from the resemblance of its song to the noise of the reel used, even at the beginning of the present century, by the hand-spinners of wool. But this kind of reel being now dumb, in such districts the country-folks of the present day connect the name with the reel used by fishermen, as being that most familiar to them. The power of so-called "ventriloquism," ascribed by some to this bird, has been in a measure explained by Mr. Blyth, and subsequently by other writers, to be the effect of the bird's turning its head while singing, so as to change the direction in which the sound of its voice is thrown; but probably the high pitch of the note has also much to do with the marvellous bewilderment it causes, for there are few human ears that can at once discover the exact spot from which a very shrill tone proceeds. The food of the Grasshopper-Warbler is small snails, slugs and insects.

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* *Motacilla nævia*, Boddaert, Table des Planches Enluminéez, p. 35, no. 581, fig. 3 (1783).

† *Sylvia locustella*, Latham, Ind. Orn. ii. p. 515 (1790).

Naturalists owe the precise determination of the Grasshopper-Warbler or Grasshopper-Lark, as it was long called, to the discernment of White of Selborne, who, writing to

Pennant in 1768, briefly but unmistakably described its gestures, though the latter had already enrolled it among British birds from an example received out of Shropshire, and there has since been comparatively little confusion about it. White, whose words need not here be quoted, justly remarked that Ray had no personal knowledge of this bird, for that described by him, after a communication from Mr. Ralph Johnson of Brignall, in Yorkshire, was assuredly the Wood-Wren, though taken by Pennant to be the present species. By other old authors it has also been almost inextricably confounded with the Tree-Pipit. It was sufficiently well portrayed in the 'Planches Enluminées' (no. 581, fig. 3), but Buffon's *Fauvette tachetée* (Hist. Nat. Ois. v. p. 149), referred to that figure, seems, like Brisson's species of the same name, to be founded on Aldrovandi's description of a very different bird. Singularly enough, Montbeillard, Buffon's colleague, gives in the same volume (p. 42) a translation of Pennant's earliest account, applying to the bird the name of *Locustelle*, and remarking that it had not been observed out of England.

Unless the old birds are closely watched and seen carrying materials for building or food to their young, the nest is very difficult to find. Montagu, writing in 1802, mentions his having found a nest, but though he was clearly the first to effect the discovery, he does not say in what year or where it was made. Mr. R. R. Wingate of Newcastle-upon-Tyne, having long wished to get the eggs, in June, 1815, eyed "the bird to the distant passage on the top of a whin-bush by which it entered and left the nest. This he found was built at the bottom of a deep narrow furrow or ditch, overhung by the prickly branches of the whin, and grown over with thick coarse grass, matted together year after year, to the height of about two feet; all of which he was obliged to take away piece-meal before he succeeded in gaining the prize."

The Grasshopper-Warbler is found in places of very varied character. In no part of England probably was it more abundant than in the great fens of the Bedford-Level district, before that was drained and reclaimed, but it affects also dry soils, and inhabits indifferently heaths, commons, woods and even enclosures where the hedgerows are tangled and thick enough to afford good hiding-places. The nest, which is built in May, is cup-shaped, about four inches across over the top, formed externally of coarse grass, sedge or the dried stems of some species of *Galium*, mixed with moss, and lined with finer bents within. This bird lays from five to seven eggs, which measure from ·75 to ·65, by from ·57 to ·51 in. and are of a pale pinkish-white, freckled with darker reddish-brown, the markings most commonly dispersed all over the shell, but often collected in a cap at either end or in a belt, while occasionally irregular dark hair-like lines are seen more or less encircling the girth.

Besides all the counties of England and Wales in which, with scarcely an exception, it has been ascertained by Mr. More to breed yearly, though always local and nowadays nowhere plentiful, the Grasshopper-Warbler has been traced by Mr. R. Gray as a regular visitor to Scotland from the Solway to the Firth of Forth on the east side, and as far northward as Bonaw in Argyllshire on the west. It seems, however, to miss the border counties of Berwick and Roxburgh, as well as Selkirk. In Ireland Thompson regarded it as being probably a regular summer-bird in suitable localities throughout the island. It is one of the many wayfarers that have occurred in Heligoland, and on the Continent is found in Belgium, Holland and as far north as Sleswick, where it breeds. It does not cross the Baltic, but is distributed throughout North Germany, while further eastward it attains a higher latitude, since Herr Meves procured it near Lake Onega in Russia. Thence it is reported as extending across the whole of southern Siberia to the Pacific; but, as with many other birds, it has possibly been confounded with allied species, of which some five or six have been distinguished. Its southern limits in Asia, supposing it to occur there,* cannot be even approximately given. It was not met with by Canon Tristram in Palestine, and its asserted appearance in Egypt is more than doubtful. Nor is it recorded from Greece or Turkey. It is found in Sicily and Italy, but is apparently rare in both. In Algeria Loche says it occurs accidentally. Mr. Drake obtained it in Morocco in March, and Mr. Saunders says it is frequently heard in southern Spain, near Malaga, where it remains through the winter. In France it is very widely spread, and is said to be especially common in Britany. Its eastern boundaries in Europe, if it does not go to Asia, cannot yet be traced, but they will no doubt soon be laid down, after full investigation of the section of aquatic Warblers to which the present species and its allies belong.

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* It has been several times recorded from India, but the Indian specimens examined by the Editor are certainly distinct, and are probably referable to the

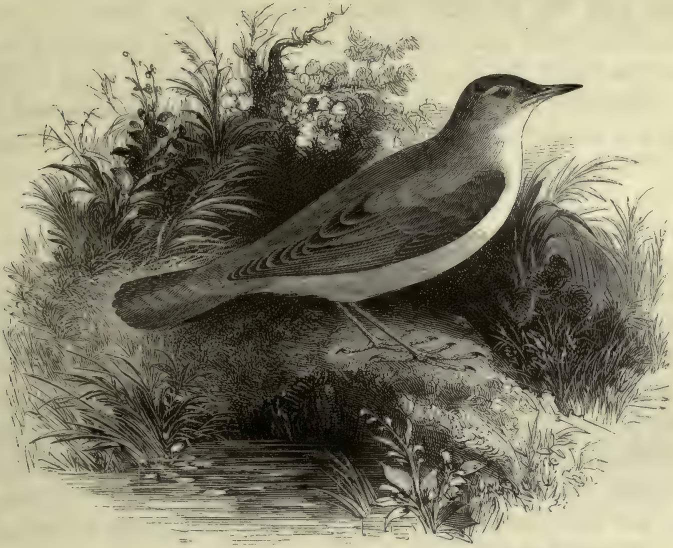
The bill is brown, with the base of the lower mandible paler: the irides hazel: the top of the head, back, and wings, greenish-brown, the middle of each feather being darker, and thus producing a mottled appearance; the tail brown with faint bars; the chin, throat, breast and belly, pale brown, spotted with darker brown on the neck and breast; flanks and lower wing-coverts of a deeper tint, with dark median patches; lower tail-coverts, which are very long, pale brown, streaked along the shaft with darker brown: legs, toes and claws, pale yellowish-brown.

The whole length five inches and a half. The wings short and curved: from the carpal joint to the end of the longest primary, two inches and three-eighths; the second primary longer than the fifth, but not so long as the fourth; the third the longest in the wing. This species, as before stated, has no bristles at the gape.

Females do not differ much from males on the upper parts of the body; but are said to want the brown spots on the breast.

This species was, in 1829, made by Dr. Kaup the type of his genus *Locustella*, and beside the differences already indicated between it and the aquatic Warblers hitherto described here, the additional character may be given, that it has the tendons of the tibial muscles strongly ossified.

Lusciniopsis hendersoni of Cassin (Proc. Acad. Philad. 1858, p. 194). Another eastern species, which, though very distinct, has been confounded with it, is the *Sylvia lanceolata* of Temminck.



ACROCEPHALUS LUSCINIOIDES (Savi*).

SAVI'S WARBLER.

Salicaria luscinoïdes.

SEVERAL examples of this Warbler have been procured in this country, and there can be little doubt that it was a regular, though never a very abundant summer-visitant to England, until the drainage of the fens and meres of the Eastern Counties wrought so thorough a change in their condition and unfitted large districts for its habitation. The first example of the species known to have been obtained in Britain, and probably in Europe — for it was assuredly the first example ever brought to the notice of naturalists, was shot in Norfolk by the late Mr. James Brown of Norwich, about the middle of May in the early part of this century. It is still preserved in the Norwich Museum, and Mr. Stevenson was favoured by Mr. Brown with the information that the singular note of a bird had been remarked by himself, the late Sir William Hooker and another friend, in the marshes near Norwich for some time before a sight of the singer could be obtained. These gentlemen called it the "Reel-bird," for the same reason as prompted the fen-men to give a similar name to the species last described. At length the bird was discovered at Limpenhoe, and after much caution, for as soon as it was aware of any one's approach it would drop from its perch on an alder into a patch of sedge growing beneath, it was obtained. The specimen was submitted to Temminck during his visit to London in 1819, and, having been by him declared to be a variety of the Reed-Wren, was as such noticed by Sheppard and Whitear in their Catalogue of Norfolk and Suffolk Birds (Trans. Linn. Soc. xv. p. 18), and was labelled accordingly in the Norwich Museum, to which it had been presented.* Subsequently a second example was obtained by Mr. Brown at Strumpshaw in the same county, and this is now in the Lombe Collection at Wymondham.

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* *Sylvia luscinioides*, Savi, Nuovo Giornale de' Letterati, vii. p. 341 (1824).

Up to this time the species had not been described or recognized as distinct by any writer; but in 1824, as quoted in the last foot-note but one, the Italian naturalist Savi first described it from specimens taken in the autumn of 1821 in Tuscany, where he ascertained that it was a migrant arriving about the middle of April. For some years following, little, if anything, was added to its history, except that it was supposed by Polydore Roux to occur in Provence, and figured by him in his 'Ornithologie Provençale' (tab. 211, *bis*), but he did not meet with it there.

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* In 1820 Temminck published the second edition of his 'Manuel d'Ornithologie,' and therein stated (i. p. 194) of *Sylvia cettii*, La Marmora, a species which, though figured long before (Pl. Enl. no. 655, fig. 2), had only lately been described, that "quelques individus ont aussi été tués en Angleterre." This assertion caused some surprise among British ornithologists, who were and are unable to point to any example of Cetti's Warbler killed in this country. But now that Mr. Stevenson has proved that the first Savi's Warbler was shewn to Temminck in 1819, there can be little doubt of that distinguished zoologist having on his return come to the erroneous conclusion that the specimen submitted to him was a Cetti's Warbler, and having accordingly made the statement just quoted under that belief. Savi did not discover his *S. luscinioides*, as will presently be seen, until 1821, and there is quite enough likeness in the colour and general aspect of the two species to render the mistake, here attributed to Temminck, very probable if not excusable. On examination, however, the difference is plain. Cetti's Warbler is the smaller bird, and belongs to a very distinct group of *Sylviidæ*. It has only ten tail-feathers, a well-developed first primary, fully half as long as the second, which is considerably shorter than the third, and the third is perceptibly shorter than the fourth, fifth and sixth, the fourth and fifth being the longest in the wing. The relative proportions of these feathers in Savi's Warbler will be seen in the text.

Knowing only the facts mentioned in the last paragraph, and unconscious of its original discovery in Norfolk, so unluckily suppressed by Temminck, the late Mr. G. R. Gray announced in the 'Annals and Magazine of Natural History' for October, 1840 (vi. p. 155), the capture, in the spring of that year, in the fens of Cambridgeshire, of two birds of this species, as being its first occurrence in England. These examples were procured by the late Mr. J. Baker of Melbourne in that county, and one of them is now in the British Museum.* Soon afterwards, or at least prior to 1843, Mr. Joseph Clarke, of Saffron-Walden, obtained a pair, as is believed, from the same locality, and these specimens, which were for a time obligingly devoted to the use of this work, are preserved in the museum of that town.

From information which has been most kindly supplied to the Editor by Mr. Bond and Mr. John Brown, of Cambridge, both of whom have long been in the habit of making entomological excursions in the rapidly diminishing fen-country, it would appear that the specimens just mentioned, as well as some others from the same district afterwards, were obtained through the intervention of one Harvey, the lock-keeper at Baitsbight on the river Cam. At that time a large extent of fen in the neighbourhood was overgrown with one of the social sedges (*Cladium mariscus*), which towards autumn was regularly cut, and being made into bundles was carried by water to Cambridge, to serve as kindling for fires. The sedge-cutters used commonly to find many old nests of singular construction in the course of their work — nests which could not be assigned to any of the known kinds of fen-birds, and this fact was learned by Harvey, who dealt in various objects of natural history. The people of the district were also aware of a reddish-brown bird, having a peculiar song, often heard at night, not altogether unlike that of the Grasshopper-Warbler or Reeler, but still quite distinct; and this bird they called indifferently the "Brown," "Red" or "Night-Reeler." Instigated by his customers, Harvey at length procured from the fen-men specimens of this bird, and a few years later its fresh nests and eggs. The earliest of the former so obtained seem to have passed into Mr. Baker's hands, as just stated, and the first of the latter, taken in May, 1845, were purchased by Mr. Bond, who distributed the eggs to several of his friends —among others to the author of this work, to the Editor of the 'Zoologist,' by whom they were described in that magazine for January, 1846 (p. 1212), and to Mr. Hewitson, who in the same year figured a specimen (Eggs of Brit. Birds, pl. xxv *.).* Since that time other birds, nests and eggs have been procured from the same district—namely, a sedge-fen, now for several years reclaimed, in the parish of Milton, the great Burwell fen, also completely drained, and Wicken fen, which still grows sedge—as well as from Wood-Walton fen in Huntingdonshire, now under the plough, but whence in 1849 Mr. Hudleston obtained a nest and eggs. Since the date last mentioned no specimens of the bird seem to have been procured from any of these places.

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* In a communication to Mr. Stevenson by Mr. H. T. Frere, the latter says that many years before, specimens had been sent from Norfolk to the British Museum by the late Mr. Jary. These are not now forthcoming.

Returning now to Norfolk, the scene of the original finding of the species, Mr. Gurney in 1843 obtained a pair of birds killed at South Walsham, and Mr. Frere has one from the same locality. It has been heard by Mr. John Brown in Feltwell fen. In Mr. Newcome's collection is a nest taken near Yarmouth. Mr. Stevenson has a bird which was shot near Surlingham in June, 1856, and this is the last specimen known to have been obtained in the kingdom. It may be almost confidently asserted that the bird has not been noticed in any other part of England beside the localities named,* and is certainly unknown in Wales, Scotland or Ireland.

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* Mr. Bond is thus entitled to the merit of having been the first to bring the discovery of the eggs and very peculiar nest of this species to the knowledge of naturalists—the notices just cited having anticipated the publication of the third part of Thienemann's 'Fortpflanzungsgeschichte der gesammten Vögel,' which is said to have appeared in 1848, and contains a figure of its egg (Taf. xxi. fig. 12), while he in his fifth part, said to have been published in 1850, gave (p. 202), from the experience of Herr Löbbecke, a good account of its nidification as observed by him in Holland. Subsequently, in 1856, Thienemann figured (Taf. ic. figs. 12, *a*-*c*) three more eggs, of which no account appears in his letter-press.

In habits, Savi's Warbler resembles the species last described, generally skulking in the thickest herbage and being as reluctant to take wing. But it seems never, like the Grasshopper-Warbler, to quit marshy ground, and even this must not only be of considerable extent, but also covered with natural vegetation, reeds, sedges, sallows and the like, to attract it. It used to arrive in the Eastern Counties, according to Mr. John Brown's information, about the middle of April, and at its first coming was not shy; but, when settled in its home and during the breeding-season, was not much seen. Its song was a long, smooth trill, pitched higher, but possessing more tone than that of the Grasshopper-Warbler, and, like that bird's, chiefly heard early in the morning or at nightfall. About the middle or end of May the work of nidification began, and the eggs were laid towards the close of that month or the beginning of June. The nest was cup-shaped and deep, with a large foundation placed low in the sedge, so as to be close to the ground: it was composed throughout, in all the examples seen by the observer last named—one of them, with three eggs, having been found by him, June 10th, 1847, (Zool. p. 1807) of dry sedge-blades, and these so firmly entwined that the structure was, as has been mentioned, very lasting. Lining there was none, but the blades forming the inside were somewhat finer than those of the exterior. One of the first nests ever taken, figured in the 'Zoologist' (p. 1307), and placed by Mr. Bond in the British Museum, has been lately examined by Mr. Carruthers, who kindly informs the Editor that, except a single leaf of *Cladium*, the whole fabric consists of *Glyceria aquatica.** Mr. John Baker, of Cambridge, who has perhaps seen more of the breeding-habits of this bird than any one else—having in the course of four visits to Holland taken no fewer than eighteen of its nests, tells the Editor that they were all precisely alike, and two of them submitted to Prof. C. C. Babington, were pronounced by him to be built of the blades of *Glyceria fluitans* or *G. plicata.* The account furnished to Thienemann by Herr Löbbecke of the nests found by him in the same country states that the nests were formed of *Phalaris arundinacea.* Count Casimir Wodzicki, who appears to have enjoyed excellent opportunities of observing this species in Galizia, likens its nest (Journ. für Orn. 1853, Extraheft p. 50) to that of a Moor-hen in miniature. He gives also a graphic account of its habits: how that it is never for a moment still, now on the ground, now on a reed; how that in spring it will flutter in the air like a Whitethroat and creep along a reed-stem from below to the tip; how that it is passionate and pugnacious, in the breeding-time following its mate or its rival to the very feet of the observer; and how that both sexes take part in incubation and sit so closely on the nest that they may be well studied.

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* Mr. More (Ibis, 1865, p. 23) was informed by Mr. Roundell, that he had obtained eggs near Kingsbridge in Devonshire, and the late Mr. Green records (Zool. p. 2849 and p. 3945) nests taken at Dagenham and Erith in 1850 and 1853 respectively. The Editor is not aware of the existence at any one of these places of such haunts as this species loves, and we may perhaps reasonably suspect that there may be an error in each statement.

The eggs, from four to six in number, measure from ·84 to ·76 by from ·58 to ·56 in., and are of a french-white, closely freckled with specks or spots of a warm neutral tint: the markings being occasionally gathered in a zone, and nearly always most frequent at the larger end. Some examples have a decided likeness to eggs of the Wood-Lark, others have been compared to those of the House-Sparrow or the Water-Wagtail, but the tried eye will hardly fail to catch the difference. Specimens of the eggs of the Grasshopper-Warbler, chosen for their dull colouring, are sometimes passed off on the tiro as those of the rarer bird.

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* It was, however, described (Zool. p. 1212) as being formed of the common reed (*Arundo phragmites*).

Concerning the geographical distribution of Savi's Warbler there is no doubt still much to be learned. In Holland it is extremely local, and will probably altogether disappear before the advance of cultivation. In no part of Germany does it seem to occur at all,* though admitted to a place in the continuation of Naumann's work on the birds of that country; but it appears in Galizia, and a single specimen was obtained by Herr Zelebor at Bellye in the Hungarian Banat (Journ. für Orn. 1864, p. 72). It occurs also, says Alexander von Nordmann, at Odessa in some numbers. Then we have no trace of it till we find it in Palestine, where Canon Tristram procured a single specimen. In Egypt, according to Capt. Shelley, it is resident, tolerably abundant and generally distributed.† "It usually frequents the corn-fields," he adds, "selecting the spots where the crop grows most luxuriantly; and it may also be found in the reedy marshes of the Delta and Fayoom, where I have frequently seen it, and occasionally procured specimens. When disturbed it leaves its shelter very reluctantly, and flits away hurriedly, flying close to the top of the herbage for a short distance, and then it suddenly dips down and is immediately hidden. Nor will it allow itself to be driven far from the place whence it originally started; but if pursued, prefers to seek shelter by creeping among the stalks of the plants rather than expose itself again by taking wing." In Algeria Mr. Salvin found it abundant in the marsh of Zana. "On approaching the margin of the reeds," he says (Ibis, 1859, p. 304), "its peculiar rattling note might be heard in every direction. The bird, when uttering this cry, climbs to the very top of a reed, often choosing the tallest, where it sits, if not disturbed, for several minutes, without changing its position." In this locality, he continues, the nests "can only be found by wading in mud and water up to the middle, and even then it is quite a chance to find one." Canon Tristram noticed it in winter among the oases of the Sahara as far south (lat. 32° N.) as he travelled. Mr. Drake met with it in Morocco, where it is rare. In Spain Mr. Saunders states that he once recognized it in the marshes of the Guadalquivir, and he has since received a specimen from the same locality. It has occurred at Malta; but it is very rare, if known at all, in Sicily, and in Italy would not seem to be common. Dr. Salvadori says that the museum at Cagliari possesses a specimen, killed no doubt in Sardinia. In France the only departments that it can certainly be said to affect are in the extreme south. In the singular district known as the Camargue, it has been observed in winter and is said, by MM. Jaubert and Barthélemy-Lapommeraye, to be resident, but on the Durance it seems to be only a bird of passage.

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* Thienemann says he had eggs from Thuringia, indistinguishable from Dutch specimens, but this kind of evidence is open to suspicion.

† The figure in the Atlas accompanying Savigny's 'Oiseaux de l'Egypte' pl. 13, fig. 3), commonly held to represent this species, certainly does not do so. Audouin (Explication des Planches, &c., p. 278) refers it to the Grasshopper-Warbler, and he, if any one, ought to have known what Savigny intended by it.

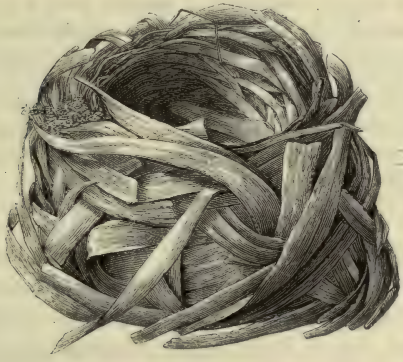
Alexander von Nordmann has stated that in two successive years during the latter half of April he took alive several birds of this species which had entered through the open windows the orangeries of the botanic garden at Odessa. They climbed about the various plants with much agility, flying only for short distances and frequently hiding themselves. In captivity they ate grubs and other small insects, but hardly lived beyond three or four days. The tail, he adds, is constantly kept spread, and when the bird is in progress is raised, the fore part of the body being depressed.

The bill is brown, with the lower mandible lighter: the whole upper surface of the body, wings and tail, reddish-brown, the last being indistinctly barred with narrow darker bands; chin almost white; throat, breast and belly pale reddish-brown; sides of the body, flanks and lower tail-coverts, which last are longer than the lateral tail-feathers, rather darker, but lighter than above: legs, toes and claws, pale brown.

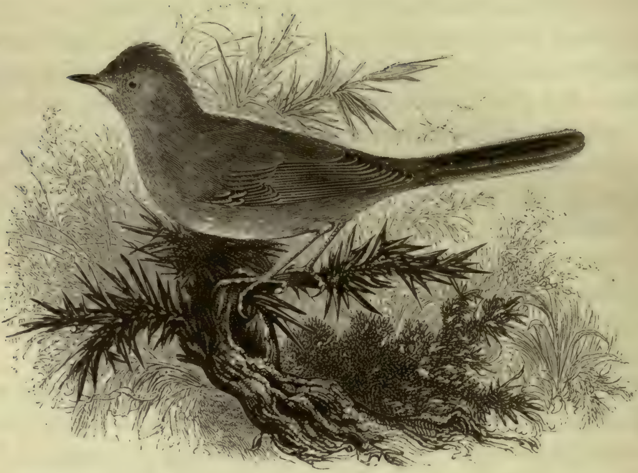
The whole length of the bird five inches and a half: the wing, from the anterior bend, two inches and a half; the first primary is very short, the second and third are much curved, and the second is the longest in the wing, the rest gradually decreasing in length. The tail-feathers, twelve in number, are very broad.

This species seems to be generically inseparable from the *Sylvia fluviatilis* of Johann Wolf, made by Dr. Kaup, in 1829, the type of his genus *Potamodus*. In 1838 Bonaparte proposed for Savi's Warbler the generic name of *Pseudoluscinia*, which a few years later he altered to *Lusciniopsis*, and one or the other of these terms has since been very commonly used for it. But, if the group of aquatic Warblers be further broken up, the name *Potamodus* should certainly be used for that section which contains Savi's Warbler and the River-Warbler just mentioned—two species which agree in every essential character, and in appearance differ chiefly by the latter having a much less rufous tinge generally, and its throat being distinctly striped with dark longitudinal markings.

The vignette represents the nest of Savi's Warbler given to the British Museum by Mr. Bond as before mentioned, and the first ever brought to the notice of naturalists, for the opportunity of figuring which the Editor is indebted to the kindness of the authorities of the Museum, and especially to that of his friend Dr. Albert Günther.



PASSERES. *SYLVIIDÆ.*



MELIZOPHILUS UNDATUS (Boddaert*).

THE DARTFORD WARBLER.

Melizophilus Dartfordiensis†.

MELIZOPHILUS, *Leach* ‡.—Bill long and somewhat broad at the base, compressed in front of the nostrils, the upper mandible overlapping the lower at the sides, and slightly emarginated near the tip; nostrils basal, subsupernal and longitudinal, situated in a large depression; gape beset with hairs. Eyelids bare and prominent. Wings feeble, somewhat incurved and not reaching much beyond the root of the tail, which is long and graduated; the first primary small, but comparatively well-developed; the second shorter than any of the next four; the fourth and fifth the longest in the wing. Tarsi strong, scaled in front, and longer than the middle toe; outer and inner toes nearly equal; claws moderate.

THE DARTFORD WARBLER was first made known to naturalists, and that as an inhabitant of this country, by Dr. Latham, who, having obtained specimens on Bexley Heath, near Dartford, April 10th, 1773, communicated the fact to

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* *Motacilla undata*, Boddaert, Table des Planches Enluminéez, p. 40, no. 655, fig. 1 (1783).

† *Sylvia dartfordiensis*, Latham, Ind. Orn. ii. p. 517 (1790).

‡ Syst. Cat. Mammals and Birds in Brit. Mus. p. 25 (1816).

Pennant, and by him this species was described and figured in the fourth edition of his 'British Zoology' published in 1776 (i. p. 329, pl. lvi.). Two years afterwards it was described by Buffon, and figured in the 'Planches Enluminées.' Since its discovery in Kent, it has been found on many of the commons and heaths of the southern counties in England —Surrey, Sussex, Hampshire, including the Isle of Wight, Dorset, Wilts, Devon and Cornwall; but in all it is one of the most local birds, and, with an exception as regards Middlesex, would seem not to breed to the north of the Thames. However, it occasionally strays further, and is recorded as having been met with in the counties of Oxford, Worcester, Leicester and Derby—a pair shot, in the winter of 1840, at Melbourne in the county last named, and noticed by Mr. Briggs (Zool. p. 2486) having attained the most northerly limit known for the species in England; as a straggler also it has occurred in Cambridgeshire, Suffolk and Norfolk. But in these counties it is very rare, and there is no reason to suppose its appearance to be otherwise than accidental.

It has not been met with either in Ireland or Scotland, but it has occurred in Heligoland. There is now undeniable evidence that this little bird remains in England throughout the whole year; and the fact is the more remarkable when its distribution in foreign lands comes to be traced; for it will be seen that its range is very limited, and, being confined to countries commonly accredited with a mild climate, might induce the belief that it was not of a hardy nature. Yet from the days of Montagu, who was the first to observe and record the chief points in the economy of this species with that diligence and accurate minuteness which distinguishes him among all his contemporaries, it has been continually seen at every season of the year, haunting either the thickest furze on heaths and commons, or downs dotted with aged whitethorns. Montagu shot one from the upper branch of a furze-bush at a time when the furze was covered with snow; and he saw other examples on the same occasion. Rennie, in his 'Architecture of Birds' (p. 233) says that he observed it on Blackheath, suspended over the furze, and singing on the wing like a Whitethroat or a Titlark, as early as the end of February. But there is no need to multiply instances of what no one will now dispute.

In habits the Dartford Warbler is an active and restless bird, when unaware of danger flitting in jerks from twig to twig, catching insects on the wing, and pausing for a few seconds to exhibit its violent gesticulations and to utter its harsh cry—first syllabled by Montagu as "cha cha," when perched on the top of a bush or hovering over it. But on the least alarm it becomes silent and seeks shelter in the nearest thicket, almost always entering at the bottom and, if pressed, passing from bush to bush, so as to shew itself only for an instant in the intervening spaces. In spring the motions of the male are exceedingly brisk: he dances, as it were, in the air, throwing his head from side to side and his tail in all directions, his song at that time being for some part of the day almost incessant. Later in the season he is more staid in his demeanour, and may then be observed on the uppermost spray of a furze-bush in vocal strain for half an hour together. Towards the end of summer, if the weather be dry, the birds may be often seen dusting themselves in the sandy track-ways which run through their usual haunts, but at this time of year they do not much expose themselves to observation, and seldom are more than two or three found in company. In autumn they seem to collect, and in winter Mr. Bury (Zool. p. 6852) has noticed that when shooting in the Isle of Wight, they are constantly driven up from the turnip-fields before the dogs. The precise nature of the Dartford Warbler's food at this season, or indeed at any other, has not been ascertained, but small insects of all kinds are said to be taken, and Montagu mentions his having found in one the larvæ of a large *Cimex*. According to Mr. Blyth it will in autumn eat blackberries. The appearance of this bird is generally singular: its very long tail and very short wings, with the slaty-blackness of its upper parts, seen as it flees from the disturber of its peace, have often struck even the incurious, while closer observation shews that when flying the legs are generally held hanging down as if broken. Mr. Ellman states (Zool. p. 3277) that on three different occasions he has easily run the bird down, and he is certainly right in saying that it seldom flies more than fifty yards without resting.*

Up to the year 1806 nothing was known of the nidification of this species, but Mr. Stackhouse having assured Montagu that it certainly bred in Cornwall, the information redoubled the latter's ardour to discover its nest, and after much patience he was successful, as his communication to the Linnean Society in May, 1807 (Trans. Linn. Soc. ix. p. 191), afterwards reprinted in the 'Supplement to the Ornithological Dictionary,' shews. After premising that on the 16th of July, 1806, he had discovered three pairs of Dartford Warblers on a large furze-common near Kingsbridge, in Devonshire, two pairs of which, from their extreme clamour, and frequently appearing with food in their bills, evidently had young, he goes on :—

"On the 17th, my researches were renewed, and after three hours watching the motions of another pair, I discovered the nest with three young: it was placed among the dead branches of the thickest furze, about two feet from the ground, slightly fastened between the main stems, not in a fork.

"On the same day a pair were observed to be busied, carrying materials for building; and by concealing myself in the bushes, I soon discovered the place of nidification, and upon examination, found the nest was just begun. As early as the 19th, the nest appeared to be finished; but it possessed only one egg on the 21st, and on the 26th it contained four, when the nest and eggs were secured.

"The nest is composed of dry vegetable stalks, particularly goose grass, mixed with the tender dead branches of furze, not sufficiently hardened to become prickly; these are put together in a very loose manner, and intermixed very sparingly with wool. In one of the nests was a single Partridge's feather. The lining is equally sparing, for it consists only of a few dry stalks of some fine species of *Carex*, without a single leaf of the plant, and only two or three of the panicles. This thin flimsy structure, which the eye pervades in all parts, much resembles the nest of the Whitethroat."

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* The habits of the Dartford Warbler, as observed near Godalming in autumn, have been described with much humour by an anonymous writer in the 'Magazine of Natural History' (vi. p. 112), and the account has been reprinted in a volume called 'The Letters of Rusticus' (p. 27). Should the veil which hides this mysterious personage from an admiring public ever be dropped, his statements will no doubt be willingly quoted by naturalists; but, so long as he remains behind it, he must be content to have them passed over by those who believe that assertions as to fact can only be established by the publication of the writer's name.

Though the nest has since been repeatedly found in many places, no writer has surpassed Montagu's account of the bird's nidification, which is accordingly here quoted. But the nest which he took seems to have been, as nests for the second brood commonly are, less stoutly put together than those built earlier in the season, and these, though composed of similar materials, are much more compact and rather resemble those of the Sedge-bird than of that to which he likened his specimen. The eggs are somewhat similar to those of a Whitethroat, but the colouring is less suffused, and the markings bolder, being either of a deep olive or of a reddish-brown * on a clear ground of french-white or stone-colour. They measure from ·72 to ·64 by from ·52 to ·49 in.

Young males brought up from the nest, Montagu says, "began to sing with the appearance of their first mature feathers, and continued in song all the month of October, frequently with scarcely any intermission for several hours together: the notes are entirely native, consisting of considerable variety, delivered in a hurried manner, and in a much lower tone than I have heard the old birds in their natural haunts. This song is different from anything of the kind I ever heard,—but in part resembles that of the Stonechat."

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* It may be remarked that the eggs of several species of *Sylviidæ* and *Turdidæ* shew a tendency to what is called "dimorphism." Thus a large series of the eggs of the Dartford Warbler may be readily divided into two sets, one of which inclines to olive, while in the other a reddish hue prevails. The olive colour in birds' eggs often seems to be closely allied to blue—as witness the bluish varieties occasionally laid by Nightingales, Pheasants, Plovers and Gulls. In the Warblers this divergence is perhaps greatest in the eggs of the widely-spread *Cisticola schœnicola*, and it has led to some serious disputes among those oologists who have only had specimens of one character before them, and have not seen the papers on the subject by Herr Keitel (Naumannia, 1858, p. 137) and M. Lunel (Bulletin de la Société Ornithologique Suisse, 1865, p. 9), with their accompanying plates.

Besides the parts of England already enumerated, the Dartford Warbler inhabits certain districts of France, being there as local as with us. In the north it seems to be only a straggler, and its most northern limit on the continent is Montreuil-sur-Mer, where, according to Degland, it has been observed. In Anjou and Britany it is more abundant, especially in the department of Finistère, where it appears to sojourn, as also in Provence * and the south generally; but here, though staying all the year, and inhabiting dry places among heather and broom, it breeds only, according to MM. Jaubert and Barthélemy-Lapommeraye, in a narrow belt along the coast from the Pyrenees to the gardens of Nice. In the north of Italy it seems to be rare, if known at all, and though it breeds on the Tuscan hillsides is not very common there. It has been said to inhabit Corsica, and it is resident in Sardinia, frequenting the grassy uplands. In Sicily it is rare, but it breeds near Palermo and Catania, and has occurred in Malta. In Greece its appearance has been noticed by Von der Mühle, and it is said to be found in Asia Minor. Canon Tristram observed it among bushes in the most barren parts of Palestine, and though Dr. von Heuglin says it is rare in Lower Egypt, the Canon also found it abundant in winter among the dayats of the Algerian Sahara, but it would seem only to breed on the mountains, where he took several nests. Mr. Drake says it is common in Morocco, on plains covered with palmetto. It occurs in Portugal, and Prof. du Bocage says that a specimen in the Lisbon Museum was killed at Mafra. Mr. Saunders noticed it in winter in gardens and

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* It was thence that it was made known to Buffon under its local name of *Pitchou*, but whether this was given to it from its inhabiting cabbage-gardens, as it there does, or for some other reason seems doubtful.

orchards near Murcia, and Don Ignacio Vidal says it is common near the lake of Albufera—but there is no evidence of its occurrence in northern Spain.

The bill is nearly black above, particularly towards the point; the edges of the upper mandible, and the base of the lower mandible, reddish-yellow: irides and eyelids varying with age from yellow to deep red: head, cheeks, neck, back and upper tail-coverts, greyish-black; the wing-coverts and quills, blackish-brown, with rather lighter edges, the outer tail-quills being broadly and the rest narrowly tipped with light brownish-grey; the chin chestnut-brown, in autumn mottled with white undulations which disappear in spring; throat, breast and sides, chestnut-brown; the edge of the wing between the carpal joint and the spurious wing-feathers, white; belly white; the wings and tail beneath, and the lower tail-coverts, dark slate-grey: legs and toes pale reddish-brown; claws darker brown.

Whole length rather more than five inches, the tail-feathers alone being nearly half the whole length of the bird, which is one of the smallest found in England. The wing from the carpal joint to the end of the longest primaries only two inches: the second primary equal to the seventh: the third equal to the sixth. The tail has the outer feathers three-eighths of an inch shorter than those in the middle.

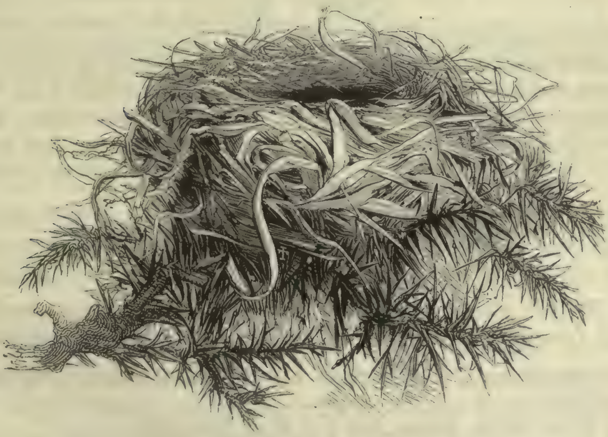
Females are more tinged with brown above, and lighter beneath, while the chestnut-brown gorget does not extend so far down as in the males.

The young, after leaving the nest, have the upper parts much as in the female, but the secondaries and tail-feathers are edged with rufous, and the edge of the wing, which is white in the adult, is pale rufous. Beneath, the colour is dull rufous, palest on the throat and deepest on the flanks. The irides are brown.

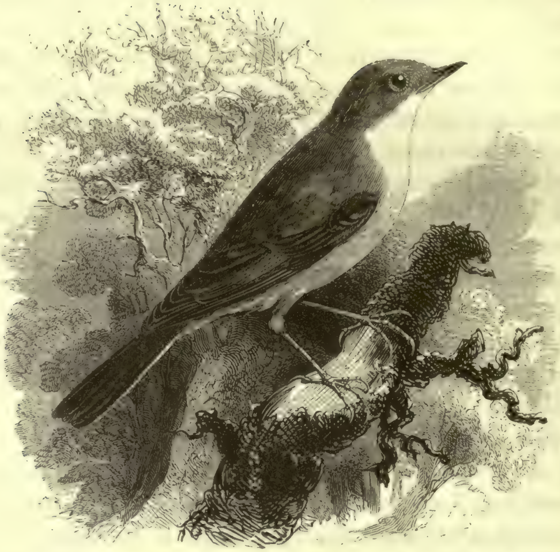
The generic term *Melizophilus* was applied to this bird by a naturalist who gave no reason for separating it from the group of *Sylviidæ*, containing the Whitethroats and others, to which it is nearly allied, and it is hard to see that the separation is allowable unless we are also prepared to break up the other sections of the family, such as the Chats and the aquatic Warblers. But somehow or other, though more natural genera have been disregarded, the genus *Melizophilus* happens to have been recognized by most writers, and, having been admitted in all the former Editions of this work, is left to stand now, though the Editor has not found its definition an easy task, and is persuaded that consistency would require the similar recognition of such genera as *Pratincola*, *Locustella* and *Potamodus*.

Very nearly allied to the Dartford Warbler is the South-European *Sylvia sarda* of La Marmora, and probably also the *Melizophilus striatus* lately described from the Punjab by Mr. Brooks. Intermediate between this group of Warblers and the next is the *Motacilla passerina* of J. F. Gmelin.

By the exertions and perseverance of Mr. Larkham of Roehampton, I am enabled to add an exact representation of the nest of a Dartford Warbler, from a specimen taken on Wimbledon Common in May, 1838, after watching the birds for some hours every day for a fortnight.



PASSERES. *SYLVIIDÆ.*



SYLVIA RUFA (Boddaert*).

THE GREATER WHITETHROAT.

Curruca cinerea†.

SYLVIA, *Scopoli*‡.—Bill rather stout, short, not very broad at base; upper mandible decurved from the middle towards the point which is slightly emarginated; nostrils basal, lateral, oval and exposed; gape beset with hairs. Wings moderate; the first primary very short, the third longest. Tail of twelve feathers, generally somewhat rounded, but in a few species nearly even. Legs with the tarsus scaled in front and short, longer than the middle toe; toes and claws short.

THE GREATER WHITETHROAT, if not more numerous as a species, is perhaps more generally diffused here than any of the other summer-Warblers which annually visit this country. It makes its appearance about the third week in April, and frequents the sides of woods, thickets and hedge-rows,

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[*] *Motacilla rufa*, Boddaert, Table des Planches Enluminéez, p. 35, No. 581, fig. 1 (1783).

[†] *Sylvia cinerea*, Latham, Ind. Orn. ii., p. 514 (1790).

[‡] Annus I. Historico-Naturalis, p. 154 (1769).

especially those which are overgrown with brambles and the weeds usually found in such places: beds of nettles have a great attraction for it, and hence one of the commonest provincial names by which this bird is known, is that of "Nettle-creeper". The males arrive, as in most instances among our Warblers, before the females, and on their arrival display themselves with many odd antics; but both sexes are active, vigilant and shy, retreating immediately, on being alarmed or pursued, into the seclusion afforded by the thick underwood and coarse vegetation of their favourite haunts. The nest is placed in a low bush, or a tall nettle, but more often among a tangled mass of brambles, long grass and weeds, especially where the *Chenopodium* flourishes. It is occasionally placed near the ground, seldom more than three feet from the surface, and is formed on the outside almost entirely of dried grass-stems, or the stalks of umbelliferous plants, and is lined with finer bents, with a few of the flowering heads of grass or horsehair, but the sides and bottom are very thin and open. The eggs are from four to six in number, of a greenish-white, suffused or mottled with small specks of olive-green, or the ground may be of a stone-colour with patches of grey and marbled with light brown: the markings are sometimes gathered at one end, but are most commonly pretty equally dispersed. They measure from ·76 to ·67 by from ·57 to ·52 in., and are usually laid early in May.

The food of this species consists of insects in their various stages, particularly white caterpillars, and most of the smaller-sized fruits and berries, to obtain some of which they visit the kitchen-garden, and bring their young with them in July and August. Some of the notes of this bird, and especially its call, are rather harsh, others are pleasing, though too frequently repeated; but the cock always sings in earnest, erecting his crest, puffing out his throat, shaking his wings, jerking his tail and making other rapid movements, which mark his zeal and agitation. Occasionally he sings on the wing, ascending with a peculiar flight, rapidly describing small circles, and after a few turns descending to the spot from which he arose. The bird is equally lively and entertaining when kept in confinement, and, for a species of this family, is so easily preserved in health that, according to Capt. Hutton, it has survived a voyage to New Zealand, whither it has been transported with the hope of its becoming naturalized.

The Greater Whitethroat is plentiful in most parts of England and Wales, but, though breeding regularly in every county, appears to decrease in numbers towards the north. It is, however, one of the most familiar summer-visitants in Scotland: Mr. Graham found it in Mull and Iona, but according to Mr. Gray it is wholly unknown in the Outer Hebrides. The same gentleman states that Mr. Sinclair has traced it beyond Loch Sunart in Inverness, and that it appears to have occurred once or twice in Orkney and Shetland. In Ireland it is said to be a regular summer-visitant from south to north and to frequent every hedgerow.

This Whitethroat is said to be common in Norway as far as Trondhjem and to visit Nordland. In Sweden it has been found in Jemtland and is plentiful further south. Dr. Malmgren informs the Editor that it occurs at Uleåborg in Finland and breeds near Kajana. In Russia Herr Meves found it common even at Archangel. Pallas says that it inhabits Siberia, but his determination of the species is open to doubt. Ménétries found it in bushes near Lenkoran. Mr. Blanford noticed it in Persia* one hundred and fifty miles east of Shiraz, and Mr. Hume says (Ibis, 1871, p. 32) that one was obtained by Dr. King at Aboo in India. It is abundant in Palestine and resident there, though its numbers are increased by immigration in spring. It is a bird of double passage in Arabia and Egypt, wintering in Abyssinia and Kordofan. It also occurs throughout North Africa, and Messrs. Shelley and Buckley obtained it at Accra on the Guinea Coast. MM. Webb and Berthelot observed it in the Canaries but it has not been recorded from the Azores or Madeira. In almost all countries of Europe it seems to be abundant and it winters in some of the more southern parts and in some of the Mediterranean islands.

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* The Persian bird, which is said to be very common there, is distinguished by De Filippi as "*var. persica*"; but specimens kindly shewn to the Editor by Mr. Blanford appear not to differ from our own.

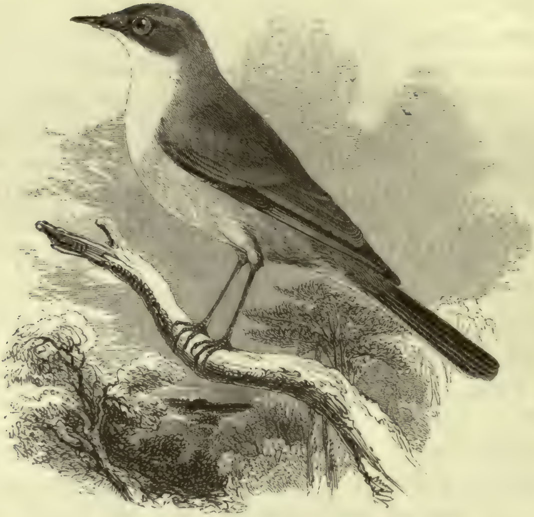
The bill is brown: the irides hazel: the head and neck smoke-grey, tinged with brown; the back, wing-coverts and upper tail-coverts, reddish-brown; quill-feathers greyish-brown; secondaries and tertials broadly edged with rufous-buff; outer web and three-fourths of the distal end of the inner web of the outer pair of tail-feathers, which are shorter than the rest, dull white; the next pair have the outer web dull white only near the tip and the inner web rather darker; the third pair have a whitish patch at the tip of the inner web only; all the others are dull brown, with rufous edges; chin and throat, white; breast, belly, flanks and under tail-coverts, pale brownish-white tinged with rose-colour; wing- and tail-quills beneath, light brownish-grey: legs pale wood-brown; toes and claws darker brown.

The whole length is five inches and a half. From the carpal joint to the end of the wing, two inches and five-eighths: the second quill shorter than the fourth or fifth which nearly equal the third.

The female has the head of nearly the same colour as the back and wants the rosy tint on the breast, while the other colours are less pure.

Young birds have a light-coloured space between the bill and the eye; the irides are yellowish-brown, and the outer tail-feathers tinged with rufous.

This species, being the *Motacilla sylvia* of Linnæus, seems, in the absence of other means of determination, most proper to be regarded as the type of the genus *Sylvia* instituted by Scopoli and afterwards recognized by Latham. By many authors the generic name *Curruca* has been used for the birds of this group, but that course is clearly opposed to every principle of priority. Very nearly allied to the Greater Whitethroat is the South-European *S. conspicillata*. On the other hand the Indian *S. affinis*, which has been regarded as identical with the present bird, more nearly resembles the next to be described.



Sylvia curruca (Linnæus*).

THE LESSER WHITETHROAT.

Curruca sylviella†.

This pretty Warbler was first discovered in this country by Lightfoot, who, as already mentioned, first recognized the Reed-Wren: he found it near Bulstrode in Buckinghamshire and sent specimens to Latham, who, in 1787, gave a description and bad figure of it in the 'Supplement' to his 'General Synopsis of Birds' (i. p. 185, pl. cxiii.). This Warbler visits many parts of England every year, commonly arriving about the middle of April, but is said to have been noticed in Cornwall as early as March, and it has been obtained in this country so late as the second week of October. In many of its habits it closely resembles the preceding species, but is inferior to it as a songster. It frequents high and thick hedges, shrubberies, orchards and gardens, and is occasionally to be seen and heard in lofty trees, but is seldom or never found in large woods. The louder notes of this bird, which want the harshness characterizing those of the Greater Whitethroat, have nothing particular in their tone to recommend them ; but the song may still be termed pleasing, and its many breaks being linked, as it were, together by the frequent repetition of notes, which have been syllabled as "sip" "sip" "sip", is almost incessant, especially if the weather be sultry ; and it is to be observed that the Lesser Whitethroat continues its song much later in summer than any of its congeners.

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* *Motacilla curruca*, Linnæus, Syst. Nat. Ed. 12, i. p. 329 (1766).

† *Sylvia sylviella*, Latham, Ind. Orn. ii. p. 515 (1790).

The food of this species is very similar to that of the Greater Whitethroat—namely, insects in their various stages, and especially *Aphides*, the smaller fruits, for which it visits gardens, and later in the season it feeds on the berries of the elder and some others. It is hard to keep this bird for any length of time in confinement, though it may be easily reared from the nest.

The nest is frequently placed among brambles or low bushes : it is slightly but firmly built, generally formed on the outside of strong bents or stalks of umbelliferous plants, and lined with finer bents, fibrous roots and horsehair. The eggs, four or five in number, measure from ·69 to ·61 by from ·52 to ·46 in. They are white, boldly blotched, spotted and speckled, principally at the larger end, with deep olive-brown, under which are often patches of pale grey, and above irregular lines of dark brown. Incubation begins early in May.

The Lesser Whitethroat is by no means an uncommon bird in many parts of Great Britain, but is observed to be much more plentiful in some seasons than in others. Like many more of our summer-visitants its numbers decrease towards the west, and it holds a very doubtful place in the Irish fauna. Mr. More states that it does not breed in Cornwall or Devon, and he can find no authority for saying that it does so in Wales, Cheshire or Lancashire, but in all other English counties it breeds regularly. In Scotland, according to Mr. Gray, it is sparingly met with in Ayrshire, Renfrewshire and Dumbartonshire, and it extends to the middle of Argyleshire. It also occurs in the three Lothians, and Mr. J. Murray informs Mr. More that it breeds regularly in Stirlingshire. Dr. Saxby has found it in Shetland on several occasions.

On the Continent it visits Norway, and, according to Herr Collett, is pretty common as far as Trondhjem, but does not go beyond lat. 65° N. In Sweden its range is much the same as that of the last species. From information kindly supplied by Dr. Malmgren it appears to reach about the same parallel in Finland, and it was often found by Herr Meves in north-western Russia. It was obtained on the mountains of Sajansk by Dr. Stubendorff, and is mentioned by Eversmann and Karelin as having been killed near Tunka in Western Siberia. We may infer that it occurs throughout the southern part of that extensive country, since Père David states that it is common at Ordo on the northern limits of the Chinese Empire; according to Mr. Swinhoe, however, it is very rare at Pekin. It has long been known to the ornithologists of India as visiting the greater part of that country in the cold weather, and Mr. Brooks thinks that it may even breed at Almorah. Returning westward Mr. Blanford observed it throughout Persia. In Palestine it is said to occur only as a spring-migrant, and Dr. von Heuglin states that it is pretty common on its double passage through Arabia and Egypt, wintering in Nubia, Abyssinia and Kordofan. It is also found in North Africa, being a winter-visitant to the oases of the Algerian Sahara, but its southern and western limits are there unrecorded. Mr. Saunders says that it is abundant, though it does not breed, in Southern Spain; but in Portugal it is said to occur in summer. In all the rest of Europe it is known as a bird more or less plentiful during the breeding-season.

In the adult male the bill is nearly black; the base of the lower mandible yellowish-brown: the irides yellowish-white, or in very old birds pearl-white: the head, neck and back, smoke-grey; the ear-coverts almost black; wing-quills blackish-brown, the tertials edged with whitish-grey; tail-quills blackish-brown, except the outer feather on each side, which is whitish-grey and is nearly as long as the rest; chin, throat, breast and belly, nearly pure white, the last tinged with red as far as the vent; sides and flanks tinged with grey; wings and tail beneath, grey: legs, toes and claws, lead colour.

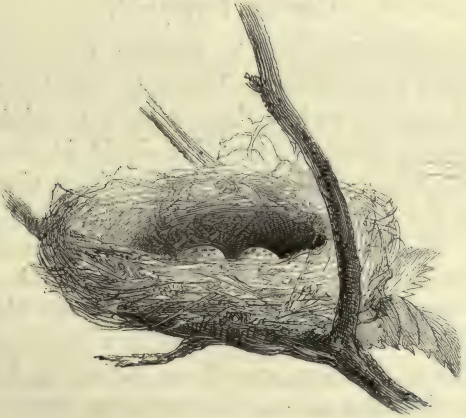
The whole length is five inches and a quarter. From the carpal joint to the tip of the wing, two inches and five-eighths; the second and fifth primaries nearly equal, but shorter than the fourth: the outer web of the fourth and fifth suddenly becomes narrow near the tip. The tail is nearly even.

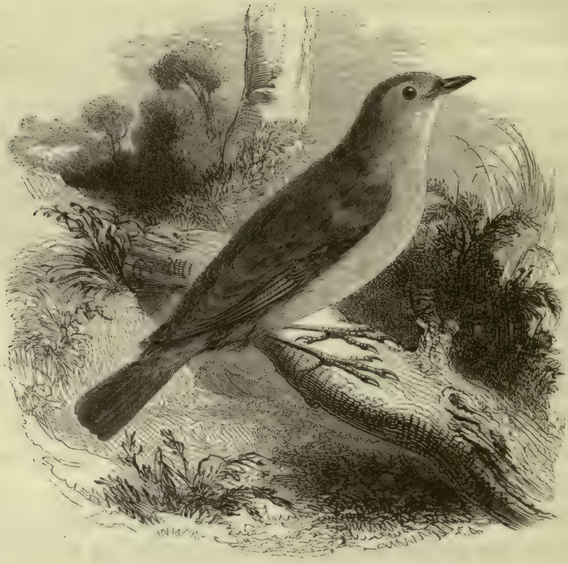
The female is not quite so large as the male; the head and neck are tinged with brown, the ear-coverts are not so dark, and the white of the lower parts is clouded with grey.

The young resemble the female, and have the irides reddish-hazel.

Professor Sundevall states that both this and the preceding species have a double moult. What may be the case with the others of the genus we have still to learn.

The vignette represents the Lesser Whitethroat's nest.





Sylvia salicaria (Linnæus*).

THE GARDEN-WARBLER.

Curruca hortensis†.

The Garden-Warbler is another summer-visitor, in habits closely resembling the Blackcap, next to be described, being lively, active and restless, seldom remaining long in any one place, generally secreting itself in dense foliage, and oftener heard than seen, but sometimes singing from a branch at the top of a tree. As a songster, it ranks only after the Blackcap, but its melody is without the wild irregularity and loud notes of that species. A good judge of the comparative value of the songs of our birds has described that of the Garden-Warbler as a continued strain of considerable modulation, sometimes lasting for half an hour at a time without a pause. Its notes are deep, harmonious

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[*] *Motacilla salicaria*, Linnæus, Syst. Nat. Ed. 12, i p. 330 (1766).

[†] *Motacilla hortensis*, J. F. Gmelin, Syst. Nat. i p. 955 (1788).

and varied, some of them flute-like and approaching in mellowness even to those of the Blackbird.

The Garden-Warbler seldom comes to this country in the spring till towards the end of April or the beginning of May. Selby remarks that it is rarely seen till the elm and the oak are bursting into leaf: the males, as is usual among our summer-migrants, arriving before the females. It frequents woods, thick hedges, shrubberies and gardens, feeding on insects, peas, various fruits—cherries in particular, according to Herbert—and the berries of the ivy, privet, elder and berberry. Sweet says it is very fond of the caterpillar of the common cabbage-butterfly, and is the only Warbler which will eat that destructive animal. The nest is placed in a low bush, or among rank herbage. I have found it hidden in a row of peas and pea-sticks in a garden, and once among some tares in an open field. Jesse mentions an instance under his own observation of a Garden-Warbler building its nest three times in succession among some ivy growing against a wall. The materials, consisting of goose-grass, bents, with a little wool and moss, lined with fine fibrous roots and a few hairs, are firmly but lightly put together: the eggs are four or five in number, of a greenish-white, with suffused patches of faint grey, clouded and marbled with irregular blotches of olive-brown, among which are spots and specks of deep brown. The eggs measure from ·84 to ·71 by from ·62 to ·55 in.

This species was first made known, as a British bird, by Willughby, to whom it was sent from Yorkshire by Mr. Jessop of Broom Hall, near Sheffield, under the name of "Pettichaps"*. More than a century afterwards Sir Ashton

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* This name seems never to have been in general use in England, or it would be readily adopted here; but the Editor has to acknowledge the kindness of Mr. Henry Jackson of Trinity College, Cambridge, in ascertaining that it is still applied to a bird (though of what species there is insufficient evidence to shew) in the extreme north of Derbyshire, not very far from Sheffield. That gentleman has communicated the information, obtained through Dr. Branson, that Mr. Fentem of Eyam was lately told that some birds seen between that place and Grindleford Bridge were known in the country as "Pettichaps." Mr. T. C. Penny has also obligingly sent an extract from Clare, the Northamptonshire poet,

Lever obtained specimens in Lancashire, which he sent under the same name to Latham, who considered it a variety of the "*Fauvette*" of Buffon, which it certainly is not—that bird, to judge by the figure, being the female of the Orphean Warbler to be presently described. Singularly enough it appears to have escaped the observation of White of Selborne: the bird which he mentions as the "Pettichaps" being, from his account of its habits, most certainly the Lesser Whitethroat. Since that period it has been found to breed regularly in all the counties of England, Derbyshire (where it is rare) and Cornwall excepted. In Wales it is only known with certainty to breed in Pembrokeshire. It is said by Selby to occur throughout the greater part of Scotland, particularly where the wooded districts margin the lakes and rivers, but Mr. Gray is disposed to think it is not commonly distributed. Still it would appear to visit most of the counties as far northward as Banffshire, and Dr. Saxby says he obtained a specimen in Shetland, September 30th, 1861. In Ireland it seems to be extremely rare, but it is recorded by Templeton as having bred at Cranmore near Belfast in 1820, and by Thompson as having done the like in the county Tipperary and as frequenting gardens in Cork. Mr. Harting also says that he has seen it in the county Wicklow, that Mr. Blake-Knox has met with it in the county Dublin, and that Sir Victor Brooke has found it to be common about Lough Erne, where it breeds regularly.

This bird is found throughout the greater part of Europe, breeding commonly in Norway as high as lat. 68° N., and reaching the birch-woods on the mountains. In Sweden its range seems to be limited by lat. 67° N., while in Finland it has not been noticed further than 65° N., and there only in one instance, as Dr. Malmgren has kindly informed the Editor. It is common about Archangel, but is not known in Siberia or Central Asia. In southern Russia, particularly on the steppes, it is abundant, and it occurs in Asia Minor and Palestine, in which last it breeds. In some parts of

wherein "Pettichap" is given as the name of a bird—in this case, from the context, obviously either the Willow-Wren or the Chiffchaff.

Greece it is said to be resident. It is a bird of passage through Egypt, but is not very common, and it was obtained in Caffraria by Wahlberg, in Damaraland by Andersson, at Aguapim by Riis, and at Abouri by Messrs. Shelly and Buckley. It also frequents the Algerian oases in winter. In parts of Spain and Italy it is at some seasons very abundant, and is the true *Beccafico* so much prized in the country last named.

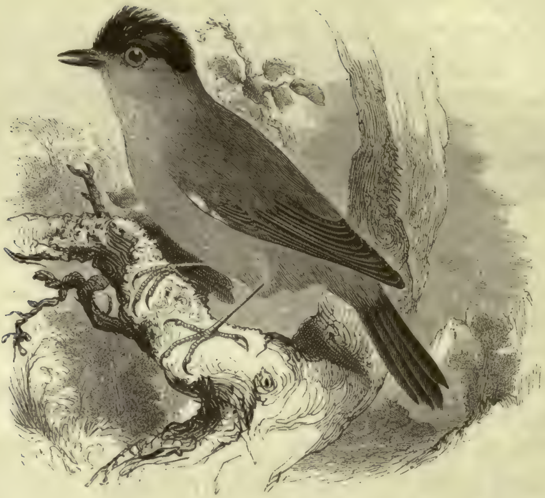
The adult male has the bill, which is comparatively stout and short in this species, dark brown: irides hazel: the eyelids white; the head, neck, back, wings and tail of a uniform hair-brown; the whole of the body beneath from the chin to the lower tail-coverts, dull brownish-white, darkest on the throat and chest, and lightest, almost white, on the belly; the lower wing-coverts of a delicate buff: the legs, toes and claws, purple-brown.

The whole length rather less than six inches. From the carpal joint to the tip of the longest primary, three inches: the second a little longer than the fourth, and a good deal longer than all those that succeed.

The female is very like the male, but has the lower wing-coverts of a lighter buff.

According to Selby, the young of the year have the region of the eyes greyish-white; head, upper part of the neck, back, rump and wing-coverts, yellowish-brown passing into oil-green; quills greenish-grey, edged with oil-green; cheeks and sides of the neck yellowish-grey; throat, breast, sides and under tail-coverts, wine-yellow; middle of the belly, white: legs, toes and claws, pearl-grey.

By Dr. Kaup this species has been separated from the other Warblers, its near allies, under the generic name, *Epilais;* but the characters assigned by him are quite insufficient to justify such a step. In the formation of its bill, however, a feature not mentioned by him, the Garden-Warbler does undoubtedly differ from either of the White-throats or from the two species next to be described, and in this respect indeed it would seem to stand almost alone among European *Sylviidæ.*



Sylvia atricapilla (Linnæus*).

THE BLACKCAP.

Curruca atricapilla.

The Blackcap is a true sylvan Warbler, visiting this country from the South and East every spring, arriving about the middle of April, or sometimes rather earlier, according to the state of the season, but never, says Selby, till the larch-trees are visibly green; and it leaves us again, with an occasional exception, in September. Several instances, however, have occurred of examples being observed and obtained during winter, in various parts of the British Islands.

Like the Nightingale, and most other spring-migrants, the males of this species arrive some days before the females, and their song soon betrays their retreat. It frequents woods, plantations, thick hedges, orchards and gardens. It is then restless, timid and shy; and is no sooner observed than it exhibits its anxiety to gain some place of concealment by hopping from branch to branch to a more secluded situation. It is cautious also in selecting the spot for its nest, the building of which is not begun till the expanding foliage promises sufficient security. The nest is usually fixed in a bush from two to five feet from the ground, and is constructed of bents and dried herbage, with a lining of fine fibrous roots and hair. The eggs, five or six in number, differ much in colour, presenting especially two very different forms. The more common kind, at least in some localities, is suffused with light yellowish-brown, clouded or marbled with a darker shade, upon which are imposed circular spots of deep brown, but their edges are indistinct and often fade into the surrounding colour. The other variety, which in some places is most numerous, is of a light red or pale crimson hue, similarly marbled and marked with darker shades of red, and often having irregular blotches of a deep reddish-brown. Occasionally perfectly white specimens may be found, the result probably of some physical imperfection of the parent. Some eggs also, which may be referred to the variety first described, are hardly to be distinguished from those of the Garden-Warbler. They measure from ·84 to ·71 by from ·69 to ·54 in.

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* *Motacilla atricapilla*, Linnæus, Syst. Nat. Ed. 12, i. p. 332 (1766).

The Blackcap is hardly inferior to any British bird in the compass of its song. It was, and justly, a great favourite with White of Selborne. "They are delicate songsters," he writes of birds of this species, and, in another passage, he says that its tones always brought to his mind Shakespear's lines:—

> "And tune his merry note
> Unto the wild bird's throat."—*As You Like It*, Act ii. Sc. 7.

While again he has correctly described the cock as having "a full, sweet, deep, loud, and wild pipe; yet that strain," he adds, "is of short continuance and his motions are desultory; but when that bird sits calmly and engages in song in earnest, he pours forth very sweet, but inward melody, and expresses great variety of soft and gentle modulations, superior perhaps to those of any of our Warblers, the Nightingale excepted." Many as are the writers who have since tried to describe the Blackcap's song, no one has better hit off its characteristic excellence than the incomparable observer whose words have just been quoted. The alarm-note of this bird is a loud "tack, tack."

Like most birds that are gifted with great powers of voice, the Blackcap is said to be an imitator of the notes of others, and occasionally to detract from the quality of its more natural song by the introduction of variations. The males of several species share with their mates the task of incubating the eggs; and this is particularly remarkable in the case of the cock Blackcap*, which is so readily known from the hen by the colour of his head: but generally male birds do not sit so steadily, so long at one time, or feed the young so assiduously, as the females. In singular contrast to the Blackcap's shyness at other times is the confidence it shews while on its nest; for the hen will then often allow herself to be approached (and that not secretly but within her full view) so closely as to be almost touched by the hand before she leaves her eggs. The cock, however, is seldom so trustful, and generally makes off when the intruder draws very near. The food of this species is insects, berries and fruit, particularly raspberries and red currants. Mr. Blyth mentions his having seen it dart into the air after insects, and catch them while on the wing.

The Blackcap visits and regularly breeds in all the counties of England and Wales: from the communications with which I have been favoured by Mr. Rodd, it appears to have become more common in Cornwall of late years than formerly, and this is probably the case in several other localities. In Scotland the species is rare, but its nest has been found in many counties, particularly to the south of the Clyde and Forth. Beyond these firths it is recorded as breeding regularly in the counties of Argyle, Clackmannan, Perth, Banff and Ross, and it has been procured more than once, and even late in the year, in Caithness, and also in Orkney. In Ireland, though very local, it is said by Thompson to be a regular summer-visitant to the neighbourhood of Dublin, and it has at different times been met with in several other parts of the island, as, for example, near Belfast and Lough Neagh, in the counties Wicklow, Waterford and Cork, and even near Tuam in Galway—not a few of these instances having happened in winter, while it is known to have bred in the county Tipperary.

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* He has even been said to sing while so employed, but confirmation of such a statement is needed.

This bird visits also every country in Europe. In Norway it is scarce, but it breeds in most of the southern and western districts so far as Trondhjem. In Sweden its northern limits are much the same as those of the Garden-Warbler, but it is less common than that species. In Finland it is not plentiful but has been observed at Uleåborg. Herr Meves found it pretty numerous at several places in north-western Russia, and in the south of that country it is said to be one of the most common birds, breeding near Odessa and in the Crimea. The Zoological Society received specimens from Trebizond, and it is included among the birds of the Caucasus. De Filippi records it from Delidjan; but Mr. Blanford did not see it in Persia, and there seems to be no trustworthy evidence of its occurrence further eastward. It is abundant, especially during winter, in Palestine where it also breeds. In Egypt, Nubia, Abyssinia and the coasts of the Red Sea it is a bird of passage coming from the south in February and March, and in the same character it appears in Algeria. Specimens have been sent from Senegal and the Gambia.* It occurs in the Cape-Verd Islands, and is very common in the Canaries, Madeira and the Azores.† In Italy, Greece and some of the islands of the Mediterranean, it frequently winters, and in such localities it would seem to emigrate for the summer.

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* Temminck says also from the Cape of Good Hope, and that he has received others from Japan and Java. The first locality is possibly true, but there can be little doubt of his being misinformed as to the second and third.

† In Madeira and the Azores a curious variety of the cock (though the usual form is far more abundant) not unfrequently occurs. This was first noticed by Heineken (Zool. Journ. v. p. 75) and was, in January, 1830, described as a distinct species under the name of *Curruca heineken* by Sir W. Jardine (Edinb. Journ. Nat. and Geogr. Science, i. p. 243). It was said to be slightly larger, and to have the black of the cap extending over the nape and shoulders as well as round under the throat, occasionally even as far as the breast; the back being also darker. A specimen of this variety from Madeira in the British Museum seems to be somewhat smaller than the common run. It has a decided tinge of

In the adult male, the bill is dark horn-colour: the irides dark brown: all the upper part of the head above the eyes jet-black; nape ash-grey; back, wings and tail above, ash-brown, the last being barred with a darker shade; chin, greyish-white; throat and breast, ash-grey; belly and lower wing-coverts white; quills beneath, shining grey: legs and toes lead-colour; claws brown.

The whole length five inches and three-quarters. From the carpus to the end of the wing, two inches and three-quarters; the second primary shorter than the fourth or fifth, but longer than the sixth.

The female is larger than the male—a thing very remarkable among birds of this family, measuring six inches and one-quarter; the top of the head reddish-brown, and the rest of the plumage more tinged with brown than in the male.

Young birds resemble the adult female, but the hood is not so conspicuous: the males, of the earlier broods certainly, put on the black cap and grey mantle before leaving this country, but they are said not to acquire the white belly till after their second summer. It would, singularly enough, seem that in winter some if not all of the males lose their black caps, and have their heads coloured like those of the females. A few of them even reappear in Europe in this guise, and hence has originated the supposed species, *Sylvia rubricapilla* of Landbek (Vög. Würtemb. p. 44); but the matter requires fuller investigation.

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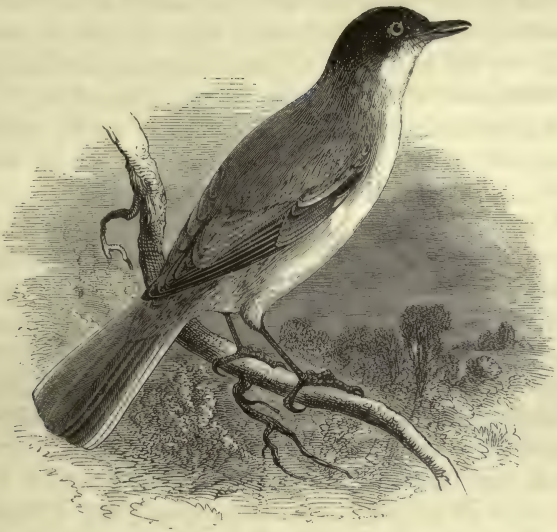
olive-green on the back, and wants the barring on the tail above. The islanders believe that when there are more than four eggs in a Blackcap's nest one of them always produces a bird more or less of this colour. The hen does not seem to be affected in like manner.



SYLVIA ORPHEA, Temminck.*

THE ORPHEAN WARBLER.

Curruca orphea.

THE occurrence of this species in Yorkshire was announced in 1849 by the late Sir William Milner, and a specimen, said to have been obtained in a small plantation near Wetherby, July 6th, 1848, is preserved in the collection he made. "My bird is evidently a female," he wrote (Zool. p. 2588), "and was observed in company with its mate for a considerable time before it was shot." From the state of its plumage, he thought that it had been engaged in incubation. In June, 1866, a young bird was caught near Holloway in Middlesex, and was kept alive, by Sergeant-Major Hanley, for nearly six months, as the Editor was kindly informed by Mr. Blyth, who carefully examined the example. Mr. Harting, in his useful 'Handbook of British

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* Man. d'Orn. p. 107 (1815).

Birds' (p. 106), also mentions a nest and four eggs believed to belong to this species, which are said to have been taken in Notton Wood, near Wakefield, in June, 1864; and Mr. Gould, on the authority of Mr. Howard Saunders, states nearly the same of eggs taken at East Grinsted.

The geographical range of this bird is very peculiar, but its boundaries may be traced thus. It has been met with in Heligoland according to Mr. Gätke, but there seems to be no positive evidence of its occurrence in Germany. It has been said to breed in Holland, but it is not recognized as a bird of that country by Prof. Schlegel, and M. de Selys-Longchamps states that it is very rare in Belgium. It visits, however, the Ardennes, the neighbourhood of Metz (whence Temminck procured the examples he described), and the Vosges. It also occurs regularly in Switzerland and Savoy, and thence across Lombardy to Dalmatia. In Corfu it is not, according to Lord Lilford, common, but Dr. Lindermayer says it is resident in Greece, and Mr. Robson has procured it near Constantinople. It is not rare in the Crimea, and seems to breed there. It is found in Asia Minor and in Palestine,* where it is a summer-visitor. It has been met with in Arabia, and Dr. von Heuglin believes that he has often seen it in autumn in Egypt and Nubia. It inhabits Algeria (where it breeds) and Morocco. It occurs in Portugal and is abundant in spring in Southern Spain. It is a summer-migrant in Sicily and Italy, but is rare in many places, and appears to fail in Sardinia. Its distribution in France seems to be singular, but means are wanting for defining its limits. It is said, however, not to be found near Paris.

In habits this bird seems to shew much affinity to the Whitethroats and Blackcap, and from Mr. Salvin's observations in Algeria the nests of each are very similarly placed and constructed, though that of the present species is more compact and thicker. The eggs are four or five in number, of a french-white, with small blotches of pale grey and irregular spots and specks of deep brown inclining to yellowish. They ordinarily measure from ·78 to ·76 by from ·56 to ·53 in., but it has been remarked by Mr. Saunders that, in Southern Spain, "about three nests out of five contain one egg almost as large as that of the Woodchat, and also one rather smaller than the average." Mr. Salvin states that the note of this species "is pleasing, but hardly so as to entitle it to the name of the Orphean Warbler;" and MM. Jaubert and Barthélemy-Lapommeraye say much the same of its song. Its food is varied; beetles and caterpillars were found in the stomach of a cock bird obtained by Strickland in Zante, 18th May, 1836; but in autumn it is said in France to eat berries, and is then regarded as a great delicacy for the table.

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* In Palestine it is accompanied by a larger form, perhaps the largest *Sylvia* known, with a bigger bill. This extends through Persia to India, where it was, in 1847, named *S. jerdoni* by Mr. Blyth, who asserts (Ibis, 1865, p. 43) that *Artamus cucullatus* (P. Z. S. 1854, p. 195) is a synonym of the same bird. *Curruca orphea* var. *helena* of Hemprich and Ehrenberg seems to be another eastern form, smaller but with a longer and straighter bill.

The male in spring has the bill black, with the base of the lower mandible yellowish: irides whitish: the top of the head, around the eyes and the ear-coverts, deep sooty-black, which, after the autumnal moult, changes to dark grey, darkest on the forehead and ear-coverts; neck, back, scapulars and upper tail-coverts, ash-grey; wing-quills clove-brown, with lighter edges, the shafts darker brown; the outer pair of tail-quills have the inner web brown, the outer white, the dark shaft being very conspicuous; the next pair have a whitish triangular patch at the tip; the third pair are slightly tipped with white; the rest are of a very dark slaty-brown with still darker bars; the throat, breast and belly white, tinged on the sides with grey; flanks, and lower wing- and tail-coverts buffy-white; tail beneath ash-grey: legs and toes dark brown; claws nearly black.

The whole length is six inches and three-eighths; bill, from the point to the gape, nearly seven-eighths; wing, from the carpal joint to the tip, three inches; the second primary shorter than the fourth, but longer than the fifth.

Milner described the female in his possession as having "the beak black and very strong, the whole upper part of the plumage dark ash-coloured brown. The outer feather of the tail white; the second on each side edged with dirty white, the rest of a brownish-black *. Chin dirty white; throat and belly brownish-white; under surface of the wings and vent light brown. Legs very strong; toes and claws black. The whole length 6 inches 3 lines." The irides of a bird obtained in Zante by Strickland were pale hazel.

The young of the year resemble the female.

It may be observed of this species that the hen, under the name of "*Fauvette*," was sufficiently well figured in the 'Planches Enluminées' (No. 579, fig. 1), and described in Buffon's accompanying text (vi. p. 31), as well as in his 'Histoire Naturelle des Oiseaux' (v. p. 117). The figure Boddaert erroneously referred to Linnæus's *Motacilla hypolais*, and Buffon as wrongly thought it was the "Pettichaps" of Willughby. Whether any former writer clearly discriminated the species may be doubtful, but there can be little question of the propriety of regarding Temminck as the first to place it on a firm footing. Vieillot afterwards called it *Sylvia grisea*.

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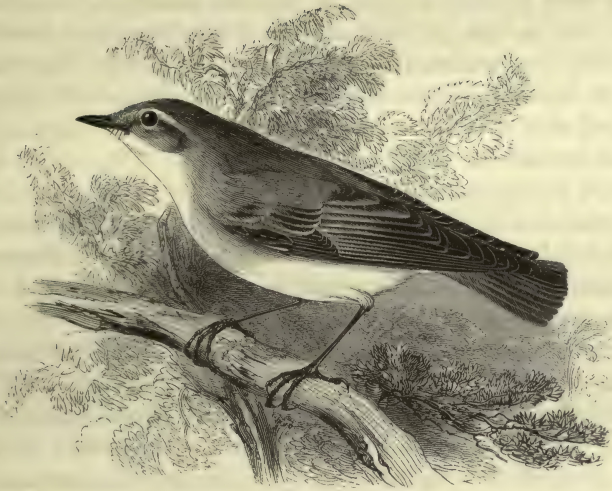
* This description, however, does not seem to be quite accurate, since the tail of the hen is marked like that of the cock, the colours being only less bright.



PHYLLOSCOPUS SIBILATRIX (Bechstein *).

THE WOOD-WREN.

Sylvia sylvicola†.

PHYLLOSCOPUS, *F. Boie.*‡—Bill slender, rather short, upper mandible decurved from the middle and compressed towards the tip, which is very slightly notched; nostrils basal, lateral, oblong and partly operculate, the membrane clothed with small bristle-tipped feathers, the internasal ridge very thin; gape beset with hairs. Wings rather long; the first primary in most species comparatively large, but always much shorter than the second, third or fourth, one of the two last being the longest. Tail of twelve feathers, slightly forked. Legs with the tarsus scaled in front and rather long, as are also the toes and claws.

THE WOOD-WREN was clearly distinguished by Gilbert White of Selborne from the two most nearly allied species, as shewn by his letters to Pennant in the year 1768, published in 1789*. In November, 1792, Mr. Thomas Lamb supplied some particulars of this same bird to the Linnean Society, which were published in 1794 in that Society's 'Transactions' (ii. p. 245, pl. 24); and in 1796 Montagu (having observed this species, in 1790, at Easton-Grey in Wiltshire and, in 1792, at White Knights near Reading, and having obtained also specimens of it, with its nests, and eggs) furnished in March, 1796, a further account of it, under the name of *Sylvia sylvicola*, to the same Society, which account was published in 1798. His name was, however, forestalled by Bechstein, who had, in 1793, contributed to a German periodical a discriminative notice of this species and its allies, calling it *Motacilla sibilatrix*. The bird is now very well known, and is at once distinguished from the Willow-Wren, next to be described, with which it is most likely to be confounded, by its longer wings; by the broad streak of a bright sulphur-yellow over its eyes and ear-coverts; by the pure green of the body above; by its whiter belly and lower tail-coverts; and, on closer examination, by its smaller and narrow first primary. The two birds just named, with the two, of which an account is to follow, have much in common, and they differ from most of the Warblers already described in the general colour of their plumage; in not being fruit-eaters; and in building nests, which are invariably domed or covered over at the top, and are commonly placed on or near the ground.

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* *Motacilla sibilatrix*, Bechstein, Naturforscher, xxvii. p. 47 (1793).

† Montagu, Trans. Linn. Soc. iv. p. 35 (1798).

‡ Isis, 1826, p. 972.

The Wood-Wren seldom reaches even the southern parts of England till near the end of April, the males making their appearance a week or ten days before the females; but the time of arrival, as first noticed by Selby, generally coincides with that of the elms' and oaks' bursting into leaf; and that gentleman considered, from repeated observations, that with all our summer-visitants there is a difference of ten days or a fortnight between their arrival in the southern and northern parts of the kingdom.

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* White was, however, to some extent anticipated in his observation of this species, for as has been already remarked (page 386) it was assuredly the bird described by Johnson to Ray.

The Wood-Wren, though everywhere an exceedingly local species, is found not uncommonly in wooded districts, preferring old plantations and woods containing tall trees, particularly those of oak or beech. The males begin their loud song, which when known to the observer is quite unmistakable, soon after their arrival, and may frequently be heard from a lofty elm in a hedge-row. The note resembles the word "twēē," sounded very long, and repeated several times in succession, at first but slowly, afterwards much quicker, and near the end accompanied by a peculiar tremulous motion of the wings, which are lowered by the side. This melody is also occasionally uttered while the bird is on the wing from one place to another; but in the pauses of the strain and at uncertain intervals there comes another kind of call, which has been syllabled "chea" "chea" "chea". The song is continued only till the young are hatched, and the bird is said to leave this country in September.

The Wood-Wren neither eats fruit nor berries; its food appears to be insects and their larvæ: some are taken on the wing, and others are sought for among the upper foliage of trees. The nest is oval, and, as above stated, domed, always placed on the ground among herbage, and formed of dry grass, dead leaves and some moss, invariably lined with finer grass and long hairs, but without feathers, which are used as bedding by the other species of this genus which breed in this country, and this fact serves to distinguish their nests, which are also commonly placed on the ground, from that of the Wood-Wren.

This bird lays six eggs, of a transparent white, thickly spotted and speckled all over with dark purple-brown and a few markings of ash-colour; they measure from ·7 to ·61 by from ·52 to ·46 in.

The Wood-Wren breeds in all the counties of England and Wales, but in the west of Cornwall, according to Mr. Rodd, it has only been seen once. In the north of England, and especially in certain parts of Yorkshire and Durham, it would seem to be more abundant than elsewhere in the kingdom. In Scotland it is known to breed regularly in the counties of Dumfries, Wigton, Lanark and Berwick, the Lothians and Perthshire, and occasionally in those of Roxburgh, Selkirk, Renfrew and Stirling. From the evidence adduced by Mr. Gray it has also been observed in the Highlands so far northward in the west as Loch an Nuagh in the county of Inverness, and in the east as Fyvie in Aberdeenshire, where Mr. Angus took its nest in 1862. Mr. Edward has also found it in Banffshire. It has until lately held a very doubtful place in the Irish fauna, but Mr. Harting was informed by Sir Victor Brooke of his having shot it in the county Fermanagh, and by Mr. Blake-Knox of his possessing a specimen killed in the county Dublin.

It has been found in Heligoland. Herr Collett doubts the accuracy of the observations which have been recorded of its occurrence in Norway; nevertheless it visits Sweden, and is said not to be rare in the south of that country, though not going northward of Upsala, and in Finland it seems not to extend further than Kuopio. In Russia, however, it reaches the neighbourhood of Archangel, but it is not common there. Its eastern limits are very uncertain, from the confusion which exists between this species and one or more of its allies, but it is said to breed in the Crimea, and, as might thence naturally be expected, to occur in Asia Minor. Dr. von Heuglin says it is not rare in Egypt, and Lefebvre met with it, in April, in the north of Abyssinia. It occurs in Algeria, and is said by Loche to breed there, but it would seem to be rare, and was not noticed by Canon Tristram in the Sahara. According to Mr. Saunders, it is found in autumn and winter in Southern Spain, but it does not seem to have been observed in Portugal. Throughout the other parts of the continent of Europe it is a regular summer-visitant to suitable localities.

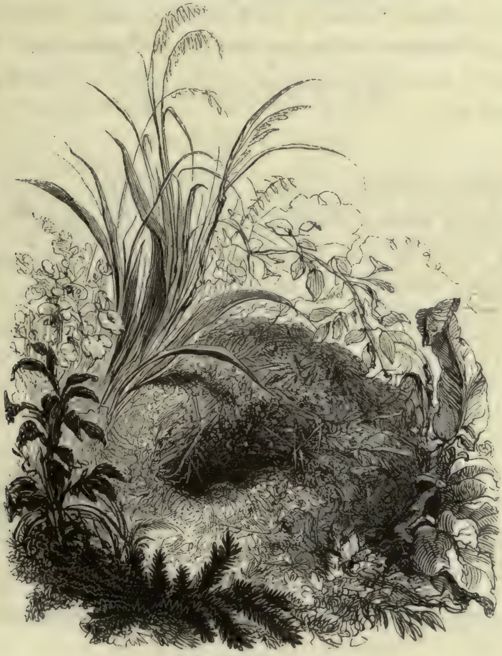
The adult male has the bill brown, with lighter edges: the irides hazel: the lores and upper half of the ear-coverts dusky; above which a streak of bright sulphur-yellow passes from the base of the upper mandible on each side over the eye; the top of the head, neck, lesser wing-coverts, back and upper tail-coverts, olive-green, tinged with sulphur-yellow;

greater wing-coverts slate-brown, edged with greenish-yellow; all the wing-quills slate-brown with lighter tips, the primaries and secondaries having also a narrow outer edge of bright yellow, the tertials a broader edge of yellowish-white; tail-quills slate-brown, with the outer edge yellow; the chin, throat, breast and flanks, delicate sulphur-yellow; belly and lower tail-coverts, clear white; the lowest feathers of the tibia, yellow; wings and tail beneath, grey: legs, toes and claws, brown, sometimes dark brown.

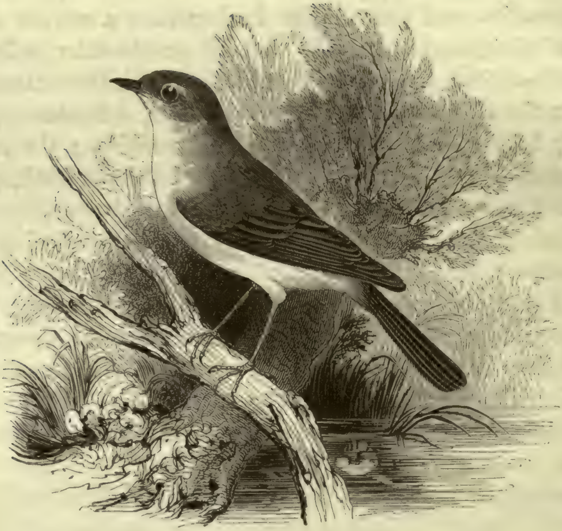
The whole length of some specimens is five inches and one-quarter; but the average measurement is often rather less. From the carpal joint to the tip of the wing, three inches: the first primary very short and narrow; the second longer than the fifth: the wings when closed reach over three-fourths of the length of the tail.

Females do not differ much from males either in size or colour.

The vignette represents the nest of this bird.



PASSERES. *SYLVIIDÆ.*



Phylloscopus trochilus (Linnæus*).

THE WILLOW-WREN.

Sylvia trochilus.

The Willow-Wren visits this country every spring, earlier in the season than the bird last described, but about the same time as the Blackcap. Around London, and in the southern counties, it appears towards the end of March or at the beginning of April, and is generally seen and heard throughout England by the middle of the month last mentioned. Selby has noticed its arrival in Northumberland as soon as the larch-trees are green. Some few localities excepted, the Willow-Wren is found in greater numbers and, as will presently be shewn in further detail, is more generally dispersed throughout the British Islands than either the Wood-Wren last described or the Chiffchaff of which an account is to follow. Its presence is at once proclaimed by its cheerful carol, and indeed the bird is not whose strains can be more aptly associated in the memory with all the delights of returning spring. Passing by a plantation or wood at that loveliest season of the year, one may meet at every score or so of yards this sprightly little musician, whose joyous burst of song is in fit harmony with the freshness of the hourly-expanding verdure, and is repeated time after time until all around thrills with the loud and merry chorus, for the strain can be heard at a very considerable distance and the numerous performers are then in their fullest vigour. Mr. Hewitson well says that "however highly the rich melody of some of the other warblers may be prized, there is a simplicity and a sweet cadence about the note of this species, which never fails to excite within me feelings of pleasure, which none but the lover of nature can either appreciate or understand, but which are to him amongst the chief enjoyments of his life." Nor is the admiration which the Willow-Wren inspires confined to its vocal powers. Its restless but graceful activity, the fearlessness with which it exposes itself to view as it flits from twig to twig, and the still greater confidence it sometimes displays, justly render it dear to all who care to study birds as they live.

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* *Motacilla trochilus*, Linnæus, Syst. Nat. Ed. 12, i. p. 338 (1766).

The Willow-Wren frequents, for the most part, trees—of what growth or of what kind seems to matter little; but it may also be not seldom found contenting itself with the thorns or furze of a common. It is lively and amusing in its actions, continually searching for small insects and not unfrequently capturing them on the wing in the pauses of its song. It begins to build its nest soon after its arrival in this country and betrays a singular amount of solicitude on the spot being approached, coupled at the same time with much disregard of its personal safety, for it will hop from bough to bough or occupy a station within a few feet of the intruder and attract his attention by a note of anxiety or even distress, which somewhat resembles that of the Chaffinch under similar circumstances. As the season advances and the Willow-Wren's cares are still more centred on the treasured contents of its nest, its behaviour becomes indeed touching, and it will readily run into almost any danger to divert man or dog from its fondly-loved offspring, while if this be futile it will pursue the spoiler for a long way with its plaintive cry. The nest is large for the size of the bird, placed on the ground*, most commonly against a bank among long grass or weeds, but often at the foot of a bush, and, like that of the Wood-Wren, is covered with a dome having a rather wide hole in the side—whence this species and its congeners are called in many parts of the country "Oven-birds." The fabric is usually of dry grass mixed with moss, but sometimes of dry fern; the bottom, however, is always lined with feathers, which in many cases must have been brought from a considerable distance. The eggs are six or seven in number, of a transparent white, commonly blotched, spotted or speckled with light red—the markings being sometimes small and thick, at others large and sparsely diffused; but Mr. Henry Doubleday tells me he has seen the eggs of this bird of a pure, unspotted white. They measure from ·66 to ·56 by from ·49 to ·44 in. The food of this species is *Aphides*, flies, and insects generally in the different stages. It does not eat fruit; and when seen in a garden should be allowed to remain unmolested as one of the gardener's best friends, from the number of insects it consumes daily.

The young are hatched towards the end of May, and there is often a second brood later in the season. In August both old and young become scarce, and the emigration from this country is generally accomplished by the middle of September. Mr. Jeffrey, however, states (Zool. s. s. p. 166) that he has observed the species in Sussex in winter.

The Willow-Wren is plentiful almost all over the British Islands, but is certainly less numerous in the western counties of England than in the eastern. Montagu says that in his time it was rarely met with in Cornwall, but Mr. Rodd states that, though rather local, it is now common where it does occur; and indeed there is good reason for believing that, being one of the species highly favoured by the spread of plantations and the effects of strict game-preservation, its numbers have generally increased of late years throughout the country. It breeds regularly in every county of Great Britain to Caithness, and in Ireland is commonly dispersed over suitable localities. It has not been traced to the Hebrides, but it occurs occasionally in Orkney, and Dr. Saxby saw one which had reached Shetland, 29th October, 1865, during a gale of wind. In the Færoes also it has been twice known to occur in autumn. Its range in summer reaches very nearly, if not quite, to the North Cape, and in every country of Europe it is a common bird. In Asia its limits cannot be defined, from the confusion existing between it and more than one allied species, but its occurrence in India seems very doubtful, though Mr. Blanford believes he met with it in the south-east of Persia. In Palestine, Canon Tristram mentions its swarming in every part of the country. In North-east Africa it appears to be pretty common, wintering there and arriving even at Khartoum and Berber so early as the end of August. A specimen killed in Natal was examined by Mr. Gurney (Ibis, 1865, p. 267), and others have been obtained by Andersson both in Damaraland and Ovampoland, while Wahlberg many years ago procured the species in Caffraria. It regularly visits Morocco and Algeria in winter, but does not seem to have been observed in any of the Atlantic Islands.

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* Mr. Alston, however, mentions (Zool. s. s. p. 512) having seen a nest in a hole in a wall nearly seven feet from the ground.

In the adult male the bill is brown; lower mandible pale yellow-brown at the base: irides hazel: lores and upper ear-coverts dusky; a light yellowish streak over the eye and ear-coverts; top of the head, neck, back and upper tail-coverts, dull olive-green; wing and tail-quills dull slate-brown, the former edged with olive-green—the tertials more so than the primaries or secondaries; chin, throat and breast, whitish, but strongly tinged with yellow; belly almost white; flanks and lower tail-coverts, tinged with yellow; lower wing-coverts bright yellow, particularly along the outer edge of the wing;

quills beneath greyish-brown: legs, toes and claws, pale brown.

The whole length of the bird is about five inches; from the carpal joint to the end of the longest primary, two inches and a half; but, as has been mentioned (page 354) of the Wheatear and as is probably the case with many other widely-ranging birds, this measurement is subject to much variety: the first primary comparatively long; the second longer than the sixth, but not quite so long as the fifth which is shorter than the fourth.

The females scarcely differ from the males either in size or plumage; and these birds moult as soon as the breeding season is over.

Young birds in the autumn are decidedly yellower than the adults at the same season, and this tinge is retained to some extent till the following spring.

The characters which distinguish the Wood-Wren from the present species have been already pointed out. Though minute some of them are unfailing, and especially that afforded by the size and shape of the first primary. It is far harder to separate the Willow-Wren from the Chiffchaff, yet the two species are perfectly distinct. The Willow-Wren is usually much the larger bird, and in fresh specimens of the adult of each the colour of the legs is sufficiently diagnostic; but practised ornithologists have been known to be uncertain if not to fail in discriminating the young, and even preserved specimens of the adult, for though generally the greener colour of the Willow-Wren above, and its whiter belly serve as a guide, these cannot always be trusted, any more than occasionally the form of the wing and the relative proportion of its primaries. It is believed, however, that in the Willow-Wren the third, fourth and fifth primaries have their outer web suddenly narrowed towards the tip, while in the Chiffchaff the sixth has also the same shape, but not always the third*.

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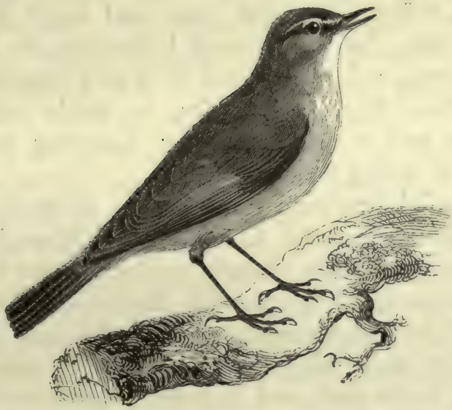
* This little matter may affect some people more than might at first appear, for by a recent Act of Parliament (35 and 36 Vict. chap. 78) the Chiffchaff is protected, while the Willow-Wren is not. To these birds the Act cannot much signify.



PHYLLOSCOPUS COLLYBITA (Vieillot*).

THE CHIFFCHAFF.

Sylvia rufa†.

WITH the exception of the Wheatear the Chiffchaff is the first of the Warblers that visit us in spring, if indeed it ever entirely leaves this island, and by its sprightly actions, as well as its oft-repeated double-note, from which it derives its name, is always a welcome visitor as a harbinger of returning fine weather. This hardy little bird, the existence of which was first shewn by White of Selborne, is not uncommonly seen as early as the middle of March, and towards the end of that month occurs pretty generally, so that it is commonly heard in the woods before the trees are in leaf to hide it. On its first arrival it is said to feed chiefly on the larvæ of the different species of *Tortrix* that are rolled up in the unfolding buds, rendering good service in devouring those destructive insects. If the weather is fine and mild, it may be seen among the most forward trees, flying from branch to branch, chasing its fellows, and catching the gnats and small flies that come in its way. In the summer it feeds on the *Aphides* which infest trees and plants, and it is also very partial to small caterpillars, flies, and moths, to obtain which it visits gardens and orchards, thereby incurring the unfounded charge of eating their produce.

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* *Sylvia collybita*, Vieillot, Nouv. Dict. d'Hist. Nat. Nouv. Éd. xi. p. 235 (1817).

† Not *Motacilla rufa*, Boddaert, nor *M. rufa*, J. F. Gmelin.

This bird frequents shady woods or groves, particularly those of older growth. Like the Wood-Wren, it is very local, but the distribution of each species, as may be seen by the account here given, is somewhat dissimilar. The two notes of the Chiffchaff are almost unceasingly delivered throughout the whole day from the branch of a tall tree, but, though only uttered by the cock, and in some places contributing largely to "the untaught harmony of spring," they hardly rise to the dignity of a song, and there is another fact which seems to preclude their being so considered. Most birds, and the Warblers especially, excepting perhaps the Lesser Whitethroat, become mute so soon as their eggs are hatched; but this is not the case with the Chiffchaff, which continues its unvarying double-note throughout the summer, hardly affected by the cares induced by its young family. Towards autumn however this double-note changes in tone, and, though nearly as incessant as before, wants the gaiety which characterizes its earlier utterance. It has been frequently syllabled "chip-chop," "chivy-chavy," or "choice-and-cheap," according to the fancy of the listener, who commonly bestows on the performer a name in accordance with his own rendering of the sound.

The nest is very like that of the Willow-Wren, oval and domed, with a hole in the side by which the bird enters. The outside is composed of dried grass, dead leaves and moss, and it is lined with a profusion of feathers. It is generally placed on or near the ground in a hedgebank, sometimes raised a little above the surface in a low bush. Mr. Henry Doubleday sent me notice of one, which he found, formed externally of dead leaves, placed in dead fern, at least two feet from the ground; and Mr. Hewitson mentions another, at an equal elevation, built in some ivy against a garden-wall. The eggs are usually six in number, of a transparent white, sparsely spotted and speckled with dark purplish-brown and sometimes dark grey. They measure from ·62 to ·57 by from ·43 to ·46 in.

As this bird is one of the first to arrive here in spring, so is it also one of the last to leave us in autumn, and it is frequently heard and seen as late as the middle of October; while some no doubt pass the whole year in England. Montagu saw it several times in the winters of 1806–7 and 1808–9 in Devonshire; Mr. Rodd states that a few examples remain in Cornwall throughout most winters, and have been heard chirping in mild open weather. Lord Lilford kindly forwards the information that he has twice seen the bird in Northamptonshire in December. Neville Wood in 1836 observed it in Derbyshire as early as February 5th, and several other similar cases are on record. The Editor was informed by Mr. Dresser that he heard its well-known note near the Crystal Palace at the end of January, 1872; but on the other hand in some parts of England, even where it breeds, the bird is not usually heard till the end of April, or even till May.

The Chiffchaff is in few places so abundant as the Willow-Wren; but in some of the western and southern counties or at least in certain parts of them it is undoubtedly the more numerous of the two species. This the Editor, from his own observation, can affirm to be the case in the south of Devon, while the same is said of it by Mr. Cecil Smith as regards his own neighbourhood in Somerset and by Mr. Harting in respect of Middlesex. The partiality which the Chiffchaff shews for trees, and especially elms, of an older growth, while the Willow-Wren is equally content with, or even prefers, young plantations of a mixed character may possibly explain this difference, but further investigation is needed before the suggestion can be accepted. The Chiffchaff breeds regularly in every English county, as also in Wales, but its numbers diminish towards the north. It was formerly thought not to reach Scotland, but later observations collected by Mr. More and Mr. Gray prove that though very local in the northern kingdom, it is not uncommon in some places and has been seen for two successive seasons even in Caithness. It was met with by Mr. Elwes in Harris and it has also occurred in Orkney and occasionally in Shetland. In Ireland it is a regular summer-visitant to certain localities from south to north, but is very partially distributed. In Norway it is said to breed in the pine-woods up to the Arctic Circle, and has certainly been seen by several good observers to the north of Trondhjem *. In Sweden, according to Prof. Sundevall, it does not breed either in the southern or middle provinces, nor does it commonly visit Lapland proper, though Wheelwright says he shot an example at Quickjock. In Finland, as Dr. Malmgren informs the Editor, it is common in the interior at least as far as lat. 66° N., but not on the coast. In Russia it is said to go beyond the Arctic Circle, but in this direction and further to the eastward its range cannot yet be determined owing to the existence of one or more species with which it is likely to have been confounded. It probably occurs however throughout European Russia, and was observed in the Crimea by Alexander von Nordmann. Strickland shot it near Smyrna in November. In Palestine it occurs much as does the Willow-Wren, but it takes its departure by the end of February. In Lower Egypt it sometimes appears in incredible numbers, and is a very common bird of passage throughout that country and Arabia, wintering in the lands lying further to the south, as Kordofan and Abyssinia. It also visits Algeria and Morocco, and is common in the Canary Islands. Though most of the birds of this species which come to Europe emigrate towards

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* It has been said to go so far as East Finmark, but Wolley, while visiting that part of Norway in 1855, satisfied himself that the statement rested only on the supposed identification of some eggs taken there, which eggs were quite unlike those commonly laid by the Chiffchaff, and agreed with a not rare variety of those of the Willow-Wren.

winter, a not inconsiderable number remain throughout that season in the more sheltered parts of Spain, Italy and Greece, with their adjacent islands.

The adult male, in spring, has the bill dark brown with lighter edges: the irides brown: lores and upper parts of the ear-coverts, dusky; over the eye a light yellowish streak passing into white behind the ear-coverts; top of the head, neck, back and upper tail-coverts, dull olive-green tinged with ochre; wing- and tail-quills, dull slate-brown edged with olive-green; chin, throat, breast, belly and lower tail-coverts, dull white, tinged with ochreous-yellow; lower wing-coverts yellow, particularly along the outer edge of the wing; wings and tail beneath, brownish-grey: legs, toes, and claws, dark brown, almost black.

The whole length is about four inches and three-quarters. From the carpus to the tip of the wing, two inches and three-eighths: the first primary comparatively long; the second about equal to the seventh, but shorter than any of the intermediate feathers; the third, fourth and fifth nearly equal in length; but all these measurements and proportions are subject to variation.

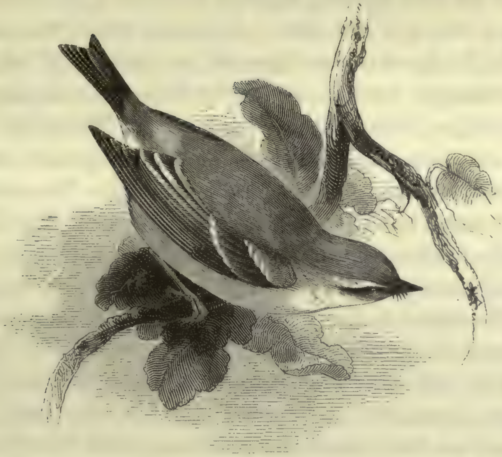
The plumage is similar in the two sexes. The young, as in the Willow-Wren, are more tinged with green and yellow than the adults, and the superciliary streak is generally less distant.

It should be borne in mind, that neither of the specific names "*rufa*" and "*hippolais*," usually applied to this species can by rule be retained for it. The Warbler on which the former was first conferred, by Boddaert in 1783, is the Greater Whitethroat as already mentioned (page 406); and the *Motacilla rufa* of Gmelin, in 1788, is founded upon the "*Fauvette rousse*" of Brisson (Orn. iii. p. 387), which, if not the bird subsequently described by La Marmora as *Sylvia cettii*, is unknown. Certainly it is not the present species, though many writers, misled by Temminck, have erroneously imagined that Latham thought it was. What the *M. hippolais* (rightly *hypolais*) of Linnæus is has before been stated (page 360). Bechstein, who, in the discriminative paper before mentioned (page 428), clearly characterized the present species, wrongly identified it with the *M. trochilus* of Linnæus, calling the Willow-Wren *M. fitis*. The specific name, *collybita*, here adopted for the Chiffchaff, was bestowed in 1817 by Vieillot, but it is to be remarked that he has most likely misspelt this word, though as he may have had some authority for the form he used, the Editor does not feel justified in writing it otherwise*. About the same time Thomas Forster termed this species *Trochilus minor* (Synopt. Cat. Brit. Birds, pp. 14 and 54), and it is questionable whether that specific name may not have priority. Two years later Prof. Nilsson, not aware of his having been anticipated, described the species as new, calling it *Sylvia abietina* (K. Vetensk. Acad. Handl. 1819, p. 115).

The very natural group, to which this and the two preceding species, with some others which do not inhabit Britain, belong, has been variously termed by naturalists. By some authors, though their reason is not clear, the group is looked upon as containing the type of *Sylvia*. By others Brisson's generic name *Ficedula* has been used ; but that is clearly synonymous with the Linnæan *Motacilla* to which it must yield place. *Asilus*, introduced by a few writers from Mœhring, had been long preoccupied in entomology. Then again it has been called *Phyllopneuste* †, under the mistaken idea that a genus of that name was founded by Meyer. *Phylloscopus*, here adopted, seems to be unquestionably the proper term.

* Vieillot gave the name because in some parts of Normandy the bird from its note is called "*Compteur d'argent*," or "Money-changer." Now the ordinary Greek word having this meaning is κολλυβιστὴς—*collybistes*, and the Editor is unable to find that such a form as *collybita* was ever in use.

† This is a nonsense word, probably originating in a slip of the pen or a misprint. Meyer used *Phyllopseustæ*, meaning "Leaf-simulators", for a section of the genus *Sylvia*, just as he also used *Saxicolæ* and *Calamodytæ* (see page 368, note), but only in the plural form, and never generically. *Phyllopneuste* does not occur in any of his books.



PHYLLOSCOPUS SUPERCILIOSUS (J. F. Gmelin *).

THE YELLOW-BROWED WARBLER.

Regulus modestus †.

A SPECIMEN of this bird was recorded in the 'Annals of Natural History' (ii. p. 310) for December, 1838, by Mr. John Hancock, as having been shot by him on the banks near Hartley, on the coast of Northumberland, September 26th, 1838. Struck by the likeness which the specimen bore to the figure of a bird described under the name of *Regulus modestus* or "Dalmatian Regulus" by Mr. Gould in the Twelfth part of his 'Birds of Europe' published in 1837, Mr. Hancock identified his new addition to British ornithology with that species, and his determination was left unquestioned for a long time. Meanwhile it was shown, in 1840, by Count Keyserling and Prof. Blasius (Wirbelth. Eur. p. lv.) that Mr. Gould's *Regulus modestus* was no new species at all, but one described many years before by Pallas (Zoogr. Rosso-

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* *Motacilla superciliosa*, J. F. Gmelin, Syst. Nat. i. p. 975 (1788).

† Not *Regulus modestus* of Gould.

Asiat. i. p. 499) under the name of *Motacilla proregulus*, and identified by that naturalist with Gmelin's *M. superciliosa*, which was founded on the "Yellow-browed Warbler" described by Latham (Gen. Syn. ii. p. 459) in 1783, from a Russian example furnished him by Pennant. In the Zoological Society's 'Proceedings' for 1863 (p. 297) Mr. Swinhoe pointed out that these two were distinct species, and that Pallas's bird can be at once recognized from the other "by its yellow rump-band." Mr. Swinhoe further stated that he had found on examination that Mr. Hancock's specimen was specifically identical with Chinese examples of the Yellow-browed Warbler, a discovery which was subsequently confirmed by that gentleman (Ibis, 1867, p. 252), who also showed that his bird was quite distinct from Mr. Gould's Dalmatian Regulus—and thus that this last name should disappear from the British list. Since then Mr. Gould has recorded (Ibis, 1869, p. 128) the occurrence in England of a second example of the present species, which is said to have been obtained near Cheltenham, October 11th, 1867, and is now in the collection of Sir John Harpur Crewe, as that gentleman has obligingly informed the Editor.

Though eighty years have passed since this bird was first made known by Latham, it is only very lately that we have learned much about it, and even now much doubtless remains to be learned. It would seem that from 1783 to 1838, nothing whatever was known of it with certainty[*], nor from then till 1845 can the occurrence in Europe of a single specimen be mentioned. In the year last named two examples, as recorded by Dr. Cabanis (Naumannia, 1851, i. p. 5), were taken by a bird-catcher near Berlin and these subsequently formed the subject of a masterly paper by that ornithologist in the valuable periodical which he edits (Journ. für Orn. 1853, p. 81, pl. 1)—the veteran Naumann lending his aid to figure the species for the first time. But before the information contained in these notices had been published, Mr. Blyth had recognized the species in India, in most parts of which country it seems to be pretty common during the cold weather, though he very naturally at first followed the errors of his predecessors *. Little, however, was he able to add to the real history of the bird, which may be said to have its rise in the important paper by Dr. Cabanis just mentioned. Thus in it was shown on the evidence of Mr. Gätke, that between the years 1847 and 1850 the species had been eight times observed by him in Heligoland, and that he had procured two examples. Subsequently he stated (Naumannia, 1858, p. 419) that it was every autumn of regular appearance, that eight specimens had been taken—nearly all by boys with blowpipes, and that had the use of firearms been allowed he could have obtained double the number. In 1859, as he informed the Editor, three more examples were killed.

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[*] Pallas as above mentioned confounded it with his *M. proregulus*, and it cannot be determined to which of the two species some of his remarks apply. The same is to be said of the observations of his worthy successors Drs. von Middendorff and von Schrenck and Prof. Radde.

On the continent of Europe two other examples are supposed to have been observed in Germany (Journ. für Orn. 1859, p. 103, and 1863, p. 60); and a male is recorded (Nederl. Tijdschr. Dierk. iii. p. 244) by Heer Crommelin, as obtained at Leyden, September 15th, 1861, and as having lived for eight days in captivity. Blasius (Naumannia, 1855, p. 485) suggests that it may breed in North-eastern Russia, for he says he observed it in the region of the Dwina in August, but this statement, together with those of other naturalists in the Russian dominions, must be received with caution, since they do not seem to have been aware of the distinction between the two allied species, which as already mentioned, have been frequently confounded. In Italy too it has been said to have occurred: according to Dr. Salvadori Signor Lanfossi has recorded an example taken in the Milanese province in October, 1847, while Signor Perini declares it to be common in the Veronese. Herr von Pelzeln informs the Editor of an example, caught near Vienna in 1836, which lived for half a year in the museum there.

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* He also described examples in abraded plumage as a distinct species, which he called *Regulus inornatus*, but speedily discovered and corrected the mistake.

In Asia all that we can at present be sure of is, that Canon Tristram obtained a few specimens at Jericho but never saw it elsewhere, that Mr. Swinhoe gives it as found generally throughout China and in Formosa, while as above stated it is known to be a regular and pretty frequent visitor in India during the winter, arriving from the countries lying to the northward, where the perseverance of two earnest investigators has at last been rewarded by the discovery of its nests and the opportunity of observing its habits while breeding—which had for long been among the things most eagerly wished for by British ornithologists.

Mr. W. E. Brooks, well aware of the interest taken in the subject, undertook an expedition for the express purpose of satisfying it, and having most prudently laid his plans met with remarkable success. From the interesting paper on the breeding of this and some other allied species contributed by him to 'The Ibis' for 1872 (p. 24) only brief extracts can here be given. He reached Gulmerg in Cashmere on the morning of May 31st, 1871, and by the afternoon had three nests, each containing five eggs, of this species in his possession; while singularly enough on the very same day his friend, Capt. Cock, also took its eggs at Sonamerg in the same country. Gulmerg is described as being a tract of extensive pasture-land more than 8,000 feet above the sea-level, surrounded by pine-clad slopes on one side of which rise snowy mountains. The whole hillside is intersected by small ravines, each having its stream of water. In such places as where there were water and old pines this bird was very abundant, every few yards forming the domain of a pair. The males were very noisy, continually uttering a loud double-note, while the cry of the female when off her nest was like the sound of "tiss-yip." The nest, Mr. Brooks says, "is always, so far as my observation goes, placed on the ground, on some sloping bank or ravine-side. The situation preferred is the lower slope near the edge of the wood, and at the root of some very small bush or tree—often, however, on quite open ground, where the newly growing herbage was so short that it only partially concealed it. In form it is a true Willow-Wren's nest, a rather large globular structure, with the entrance at one side. Regarding the first nest taken, I have noted that it was placed on a sloping bank, on the ground, among some low ferns and other plants, and close to the root of a small broken fir tree, which, being somewhat inclined over the nest, protected it from being trodden upon. It was composed of coarse dry grass and moss, and lined with finer grass and a few black hairs. The cavity was about two inches, and the entrance about one and a half inch in diameter." The same gentleman describes more or less fully ten nests which he obtained. They all possessed the same characteristics, but one had a few feathers in the outer portion. The first nest taken by Capt. Cock was "thickly lined with hair of the musk-deer." Mr. Brooks says that the eggs measure from ·62 to ·52 by from ·45 to ·43 in. "The ground-colour is always pure white, more or less spotted with brownish red—the spots being much more numerous, and frequently in the form of a rich zone or cap, at the larger end. Intermixed with the red spots are sometimes a few of purple-grey. Other eggs are marked with deep-purple-brown spots, like those of the Chiffchaff, and the spots are also intermingled with purple-grey. Some eggs are boldly and richly marked, while others are minutely spotted. The egg also varies in shape; but as a general rule they are rather short and round, resembling in shape those of *P. trochilus*." *

Mr. Hancock's description of his specimen is as follows:—"Length, $4\frac{1}{16}$ in.; breadth, $6\frac{1}{2}$ in.; length from the carpus to the end of the wing, $2\frac{1}{16}$ in.; tail, $1\frac{1}{16}$ in.; the bill from the gape to the tip nearly $\frac{7}{16}$, and from the tips of the feathers, which extend to the extremity of the nostrils, $\frac{1}{4}$ in.

"The whole of the upper plumage a greenish yellow; on the centre of the crown of the head is a streak of paler; a light lemon-coloured streak extends over the eye from the base of the bill to the occiput; a short streak of the same colour passes beneath the eye, and a narrow band of dusky passes through the eye, and reaches the termination of the auriculars. The under parts pale yellow; the ridge of the wing bright lemon colour; wing feathers dusky, edged with pale yellow, becoming broader on the secondaries; two conspicuous bands of lemon colour across the coverts; the wings reach to within ¾ in. of the end of the tail. Bill brown, with the under mandible paler at the base; mouth yellow; legs and toes brown with the under surface of the toes inclining to yellow; claws brown."

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* Some of the eggs thus obtained by Mr. Brooks were exhibited by Mr. Dresser in the Zoological Society, January 16th, 1872; and others, now in the Editor s possession, fully agree with the description above given

From an examination of a considerable series of specimens sent from India by Mr. Brooks, this species would seem to vary a good deal in the shade of its tints; and the light-coloured occipital streak is frequently wanting. The hen from the first nest obtained by that gentleman is said to have been in very faded and worn plumage.

This bird has by some authors been placed in the genus *Regulus*, to the species of which its light wing-bars give it a superficial resemblance; by others it is regarded as the type of a separate genus; and by others, again, it is classed with the Willow-Wrens. This last course seems the most preferable, as the Yellow-browed Warbler differs in no structural character of any value from the genus *Phylloscopus*, and in all its habits, as above recounted, it closely resembles the species of that group. Mr. Blyth's suggestion (J. A. S. B. 1847, p. 442) of a separate genus, *Reguloides*, for its reception * would therefore appear to be unnecessary. That distinguished zoologist laid down no definition of his term, nor did Dr. Cabanis when, in 1850, he proposed to substitute the name *Phyllobasileus* for Mr. Blyth's word. From *Regulus*, as now restricted, the Yellow-browed Warbler with its congeners can easily be recognized by the want of the single feather which covers the nostril in the Golden-crested Wren, next to be described, and its allies.

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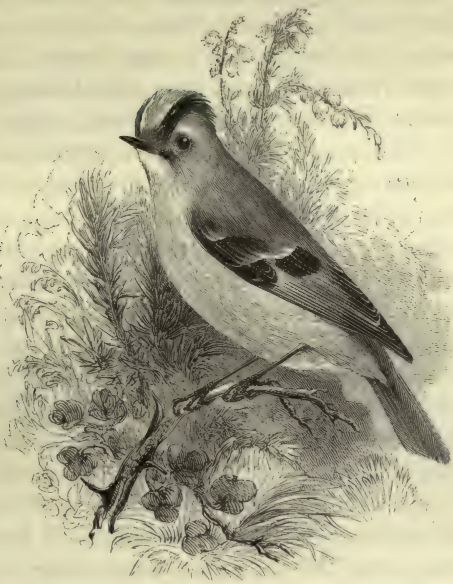
* *Regulus modestus*, Gould (that is to say *Motacilla proregulus*, Pallas), is strictly speaking the type of this genus, but the two species must be considered congeneric.



REGULUS CRISTATUS, K. L. Koch*.

THE GOLDEN-CRESTED WREN.

Regulus cristatus.

REGULUS, *G. Cuvier* †.—Bill slender, straight, the edges dilated at the base, compressed towards the point, which is notched. Nostrils basal, supernal and oval, covered by a single bristly feather directed forwards; the internasal ridge stout; the gape beset with hairs. Wings rather long; the first primary nearly half the length of the second, which is somewhat shorter than the third, and this again than the fourth or fifth, which are nearly equal, though the fourth is the longest in the wing. Tail of twelve pointed feathers, slightly forked. Legs slender and rather long; tarsi covered in front by a single scale; toes moderate; the outer and middle toes joined at their base; claws much curved.

THE little birds of this genus exhibit many of the habits of the smaller Warblers already described, and also many of the actions of the various species of the genus *Parus*, an account of which will presently follow. The Golden-crested Wren, the subject of the present notice, has a soft and pleasing song. Pennant says he has observed this bird suspended in the air for a considerable time over a bush in flower, while it sang very melodiously; but this peculiarity does not seem to have been noticed by other naturalists. The song may be commonly heard in spring, but the bird being generally among the tree-tops, its actual position cannot thereby be easily discovered, and its voice not being very strong, one must be advantageously placed to hear it in perfection. It is most frequently to be observed in fir-plantations, where it may be seen, all life and activity, flitting from branch to branch, clinging to the leaves in various attitudes, often with its back downwards, and eagerly engaged seeking various insects or their hidden larvæ, occasionally, it is said, eating also a few seeds or small berries. The Golden-crested Wren is a very social bird, and except at the season of reproduction is almost always to be observed in companies, each consisting to all appearance of a family-party, the members of which keep together by repeatedly answering one another's call as they rove from tree to tree, in quest of their food. This call-note is faint and has been compared to that of the Treecreeper, which not unfrequently accompanies the busy band. Though the species, as will presently be shewn, is greatly subject to the migratory influence, it occurs in this country all the year round; and is even observed to be sometimes more numerous in winter than in summer, many arriving here late in autumn from colder northern regions, and braving the severity of our winters. It is among the earliest breeders in spring, the song of the male being frequently heard by the end of February. The nest is generally placed under a branch of a fir, yew or cedar, near the end of the bough, being supported by two or three of the laterally diverging and pendant twigs, which are interwoven with the materials of which the outside is principally composed. The nest thus sheltered by the fir-branch above it, as shewn in the next vignette, is built of the softest moss, thickly felted with wool and spiders' webs intermixed with a few grasses and dead leaves, and is lined with a quantity of small feathers*; both for security and architecture, it is one of the prettiest examples to be found among the structures of our indigenous birds. But instances are known in which it has been built upon the upper surface of a branch, and Mr. Hewitson has seen it placed against the trunk of a tree upon the base of a diverging branch, and again in the middle of a low juniper little more than a foot from the ground. So confident and bold is the female when sitting on her nest, as to allow very close observation without flying off. She lays from six to ten eggs, generally of a pale ochraceous-white, mottled or suffused, especially at the larger end, with light reddish-brown; but sometimes they are quite white and occasionally of a uniform brownish-yellow; while Mr. Hewitson mentions a nest in which they resembled those of the Willow-Wren, being sparingly spotted with red-brown. They measure from ·56 to ·5 by from ·41 to ·38 in. Montagu, who timed the visit of a female to her brood of eight nestlings which he kept in his room, found that she came once in each minute and a half or two minutes, or, upon an average, thirty-six times in an hour; and this continued full sixteen hours in a day. The male would not venture into the room; yet the female would feed her young while the nest was held in the hand. Selby says, that he has known the young to be fully fledged as early as the third week of April.

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* Säugthiere und Vögel Baierns, p. 199 (1816).

† Leçons d'Anatomie Comparée, tab. ii. (1800).

The Golden-crested Wren is distributed generally over the whole of the British Islands, and appears to breed regularly where it occurs, except in the Outer Hebrides, Orkney and Shetland. Though resident with us as a species throughout the whole year, the fact is now established on the fullest evidence that in autumn vast flights of this bird come to some part or other of our coast, and its return-migration in spring has been observed by Mr. Gray. Selby was the first to notice the movement, and called attention to it in 1824 (Mem. Wernerian Nat. Hist. Soc. v. p. 397). Having already remarked that at the end of October and beginning of November the bird suddenly became more abundant than the number produced in his own neighbourhood, in Northumberland, could account for, and that the same was the case along a great extent of the eastern coast of Scotland, he felt convinced that the fact was due to immigration from abroad. On the morning of October 26th, 1822, after a long and severe gale, beginning from the north-east, but veering to the east and south of east, he had the satisfaction of witnessing the arrival of an extraordinary flight, which he afterwards found was observed along the whole line of coast from beyond Berwick to Whitby. "They were seen to arrive", he says, "by hundreds on the beach, so fatigued and overcome by the unfavourable change of wind, the length of their journey, or both combined, as to drop the moment they reached land, unable to make any further exertions." As soon, he continues, as they were a little recovered from the effects of their distant flight, they spread over the adjoining country, and at first filled every hedge and plantation; but their numbers rapidly decreased, and about Christmas scarcely more than the usual quantity remained. Soon after this they disappeared to a bird, and it was not till the following October that a single *Regulus* was visible in Northumberland.*

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* Thompson, on the authority of two friends, says that these materials are sometimes stolen from the nest of the Chaffinch.

Though the migratory multitude thus observed by Selby was doubtless greater than common, it has possibly been equalled or excelled. The next record of anything of the kind is by Mr. Blyth who states (Field-Nat. i. p. 467) that he learned from a friend, who was at sea off Whitby October 7th, 1833, that a flock settled on the ship's tackle, the little birds being so much exhausted as to suffer capture by the hand. In 1847, Mr. Gray saw on the east coast of Scotland a very large flock, which, taking possession of a cabbage-plot looked more like a swarm of bees than a crowd of birds, and allowed him to catch ten or twelve of them with a butterfly-net. Mr. Stevenson mentions a great irruption near Great Yarmouth on the authority of Capt. Longe. That gentleman, November 2nd, 1862, found a bush "literally covered" with Golden-crested Wrens: "there was hardly an inch of twig that had not a bird upon it," and he computed their number as between two and three hundred at least. The next morning all were gone. In October, 1863, a similar arrival was observed at Wick (Zool. p. 8879). Other instances might be given, but it is enough to add that the movement has been observed so far to the south as the coast of Dorsetshire (Zool. p. 2020), and Mr. Cordeaux in his recently published 'Birds of the Humber District' says that, on the coast of Yorkshire and Lincolnshire, the autumnal migration of this species is as well established as that of the Woodcock, and from its preceding that bird by a few days it is known as the "Woodcock-pilot," while the North-Sea fishermen have told him that it often alights on their smacks and in foggy weather perishes by hundreds. As might be expected it is constantly benighted during migration and both on these coasts and elsewhere it is often attracted by the lighthouses, fluttering in crowds round their lanterns and found in numbers dead beneath them. Mr. Gray seems to be the only observer so fortunate as to have noticed the return-journey, no doubt because there are far fewer birds to perform it, but he says that large flights suddenly appear on the east coast of Scotland in April, and actually swarm in some parts of Haddingtonshire.

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* This unwonted influx of strangers most likely exhausted the supply of food so that the natives were driven away or starved. Selby noticed the same dearth of the species in parts of Scotland in the same summer.

The wanderings of this bird lead it sometimes far beyond its usual range, and it is said to occur not unfrequently in the Færoes. According to Herr Collett a flock appeared at Vadsö in East Finmark in April 1853, but commonly it does not go further north in Scandinavia than the fir-forests reach, and there, as with us, it would seem to be generally resident—those remaining in the north being probably the adults, while the young migrate southward. Herr Meves found it pretty common in several places in north-western Russia, but Pallas never met with it in any part of that country and only once in Siberia. In Amoor-land it is said by Dr. von Schrenck to be not uncommon and it is named as occurring in Japan, but the Japanese bird has been since regarded as distinct, and, though the Editor cannot decide the question, he is inclined to suppose that Bonaparte's *Regulus japonicus* has been rightly separated from the true *R. cristatus* just as is the case with Mr. Gould's *R. himalayensis.* The Zoological Society received specimens of the present species from Trebizond but no other locality in south-western Asia can be mentioned for it, though it is said to be common in the Caucasus and the Crimea. It seems to be not rare in Turkey and to be resident in parts of Greece. It occurs in Malta, but in Africa has only been noticed in Algeria. Whether it occurs in the Canaries is not known: in Madeira it is represented by *R. maderensis,* while in the Azores we find *R. cristatus,* but always having, according to Mr. Frederick Godman, the bill and legs larger than European examples. In Portugal it is rare though occasionally met with in the northern provinces, and in Southern Spain it seems to be a regular winter-visitant, but possibly resident in the higher wooded districts. Throughout the rest of Europe it is well known.

The bill is black: the irides hazel: the male has a line of greyish-white immediately above the base of the bill; the lores are dusky; the forehead and region of the eyes dull olive-green; from the forehead on each side rises a black streak, which broadens as it passes backward, the two streaks bounding a crest of somewhat elongated feathers, bright yellow in front but orange behind; neck, back and upper tail-coverts, olive-green, slightly tinged with yellow; the smaller wing-coverts tipped with white; coverts of the primaries black; those of the secondaries tipped with white, overlying a black spot on the base of the secondaries and tertials; quills blackish-brown, edged with greenish-yellow —the tertials tipped outwardly with dirty white; all the lower parts pale greyish-olive: legs, toes and claws, brown.

The whole length about three inches and a half. From the carpus to the end of the longest primary, two inches.

In the female, the plumage generally is less bright in colour, the crest is lemon-yellow and its black edging more dingy.

The young, in their first plumage, have no trace of the occipital crest—the top of the head being darker than the back.*

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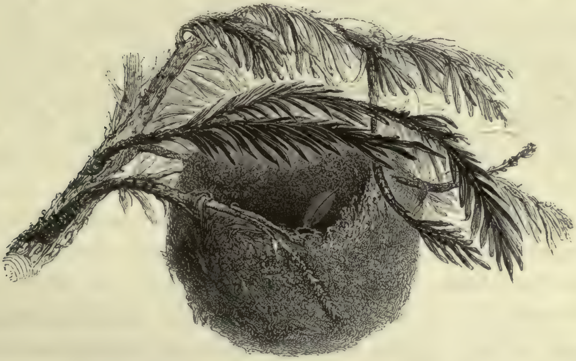
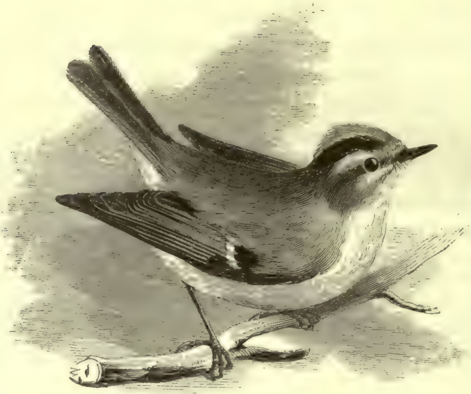
* A specimen of the well-known North-American Ruby-crowned Wren (*Motacilla calendula*, Linnæus), shot by Dr. Dewar in Kenmore wood on the banks of Loch Lomond in the summer of 1852, was exhibited by Mr. Robert Gray at a meeting of the Natural History of Glasgow, April 27th, 1858, and, May 11th of the same year, by Mr. Gould at a meeting of the Zoological Society of London (Proc. Zool. Soc. 1858, p. 290). This species, which ranges over the greater part of the North-American continent, has also, according to Prof. Reinhardt (Ibis, 1861, p. 5), wandered to Greenland, and therefore the possibility of its occurrence in Britain is rendered less strange. It differs from others of the genus *Regulus*, to which it is commonly assigned, by not having each nostril protected by the peculiar single feather already mentioned as one of the characteristics of those birds, and consequently Dr. Cabanis has proposed to separate it from *Regulus* under the generic name of *Corthylio* (Journ. für Orn. 1853, p. 83). A second specimen is mentioned by Dr. Bree (B. Eur. ii. p. 114) as having been obtained in Durham, but this proves to belong to the species next to be described, and, as Mr. Hancock kindly informs the Editor, its capture in that county cannot be fully established.





Regulus ignicapillus (C. L. Brehm*).

THE FIRE-CRESTED WREN.

Regulus ignicapillus.

The Fire-crested Wren was first made known as occurring in this country by Mr. Leonard Jenyns†, who obtained an example killed by a cat in his own garden at Swaffham-Bulbeck, near Cambridge, in August, 1832; and the specimen, being a young bird of the year, was exhibited soon after at a meeting of the Zoological Society (Proc. Zool. Soc. 1832, p. 139). It is now in the Museum of the University of Cambridge. Early in October, 1836, an example, now in the collection of Mr. John Hancock, was caught on the rigging of a ship five miles off the coast of Norfolk as recorded by his brother (Mag. Zool. and Bot. i. p. 491). Since that time more than thirty other well-authenticated occurrences of the species in this country have been recorded, besides several more cases in which it is supposed to have been observed. Nearly half the specimens obtained have been met with in Cornwall, chiefly in Lariggan Valley, as stated by Mr. Rodd. One example has been taken in Devonshire, one in the Isle of Wight, twelve have come to the notice of observers in Sussex, one is said to have been taken in Kent, one in Norfolk, one in Yorkshire, and one in East Lothian. This last rests on the authority of Dr. Turnbull, and, except the original Cambridgeshire specimen, is the only one said to have been obtained in summer—the rest having occurred between September and April, but mostly in the depth of winter.

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* "*Sylvia ignicapilla,* Brehm," Temminck, Man. d'Orn. Ed. 2, i. p. 232 (1820).

† This gentleman has since taken the name of Blomefield.

Although this species is perhaps nowhere so numerous as the preceding, the general resemblance in the two birds has possibly caused the rarer one to be occasionally overlooked; but, on the other hand, sanguine persons have doubtless often thought they have seen the present in examples of the commoner species. The distinctions between them were first pointed out by the eldest Brehm*, who imparted his discovery of this bird to Temminck, and by him it was described under the specific name since usually applied to it, though Brehm himself two years later called it *Regulus pyrocephalus* (Beiträge, ii. p. 130). In general habits both birds are very much alike, though, as will immediately appear, the Fire-crested Wren has the more limited range, and does not seem generally to winter even in central Europe. The nest is precisely similar to that of the Golden-crested Wren; but the eggs have a much warmer tint, being of a flesh- or pale salmon-colour, sometimes marked with small red dots. They are from seven to ten in number and measure from ·51 to ·47 by from ·41 to ·39 in.

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* It had previously been confounded by De Montbeillard and the elder Naumann, with the common *Regulus cristatus*. In 1819, Vieillot (N. Dict. d'Hist. Nat. Nouv. éd. xxix. p. 422) remarked that there seemed to him to be two races of this bird, the second of which he called the "*roitelet huppé à moustaches,*" saying that he had met with it in North America, near Paris and elsewhere. In 1822 (Faun. Franç. p. 231), he recognized this race as a species, naming it *R. mystaceus*, but still kept together under that appellation the European and American species, which, though much alike, are clearly distinct. His name for the former yields in priority to that of *ignicapillus*, but it seems doubtful whether it should not stand for the latter, since and generally called *R. satrapa*.

I am indebted to the late Mr. J. D. Hoy for some notes on this species, as observed by him, to the effect that in the parts of Belgium visited by him he found it only as a migratory species during the autumn: it probably passes over the same districts in the spring, but he had not then observed it. He fully expected to have found it in some very extensive tracts of forest, situated between the Meuse and the Rhine; but he could neither meet with this species, nor with the common one. He noticed its appearance in the beginning of September, at first only single birds or in pairs—the end of September, and the first fortnight in October, seeming to be the time when they pass in the greatest numbers. He did not recollect ever having seen more than five or six individuals together, whereas the common species is found in parties of a dozen or more, and is abundant throughout the winter, but the Fire-crested Wren is rarely seen even in the early part of November. Its call-note can be readily distinguished among a host of the common species, being shorter, not so shrill, and pitched in a different key, so that it is easily discovered. It seems to prefer low brushwood and young plantations of fir to the loftier trees; but yet is often found in the latter situations. It associates with the various kinds of Titmouse like the other species; but is sometimes more restless and shy.

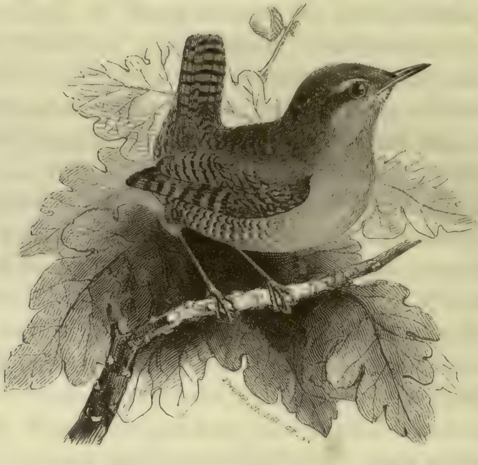
This bird is thought to have been seen in the Færoes, but, except on a few occasions in Denmark, is elsewhere unknown in Scandinavia. It has occurred at Borkum and Heligoland, and seems to be a summer-visitor throughout Germany—in most districts far less common than the preceding species, but breeding in many localities, while in some few it is said to be also found in winter. Its eastern limits appear to be bounded by a line running from Danzig in a south-easterly direction through Kiev to the Crimea, where it is however rare. It would seem to be pretty common in Turkey and Greece, and Strickland obtained it in December at Smyrna. It winters in some parts of Italy and has been found in Sardinia and Malta. It is said to occur in all the provinces of Algeria and to be especially common in the forests of Constantine. It has also been observed in the Balearic Islands and in various parts of Spain, while in Portugal it is abundant. It winters in the South of France and Vieillot found it breeding near Rouen. In Belgium, as already mentioned, it is ordinarily a bird of double passage, though it has been said to occur also in winter, and in Holland it only appears during its migration.

The bill is black, and rather stouter at the base than that of the Golden-crested Wren: the irides hazel: on the cheek above the eye, and also below it, a greyish-white streak; at the base of the crest on each side a black streak; from the gape to the eye, and over the ear-coverts, a second black streak; and from the lower mandible, passing downwards and backwards, a third black streak; the forehead greyish-white, generally tinged with rufous; the crest of a much redder-orange than that of the preceding species; the nape, back and upper tail-coverts, olive-green, inclining to orange; the sides of the neck golden-green; the lesser wing-coverts tipped with white; coverts of the primaries black; those of the secondaries tipped with white, overlying a black spot on the base of the secondaries and tertials; quills blackish-brown, edged with green—the tertials tipped outwardly with dirty white; the tail-feathers longer than those of the Golden-crested Wren; all the lower parts greyish-brown: legs, toes and claws, brown.

The whole length nearly four inches. From the carpus to the end of the primaries, two inches.

The young of the year are stated by Mr. Jenyns, "to be distinguished from those of the last species by the longer and broader bill: cheeks cinereous, without any appearance of the longitudinal streaks: crest of a pale lemon-yellow, scarcely developed: forehead, and sides of the neck, cinereous; upper parts not so bright as in the adult: under parts cinereous, tinged with yellow."

The black streak in which the eye is placed is the character by which this species can be most readily distinguished from the preceding. Its American representative with which it was so long confounded wants the golden-green colour of the sides of the neck.



TROGLODYTES PARVULUS, K. L. Koch[*].

THE WREN.

Troglodytes vulgaris[†].

TROGLODYTES, *Vieillot*[‡].—Bill moderate, compressed, slightly curved, without any notch and pointed. Nostrils basal, oval, partly covered by a membrane. Wings very short, concave, rounded; the first feather rather short, the fourth or fifth feather the longest. Tail variable in length, but generally short; its feathers soft and rounded. Feet strong; the tarsus rather long; the middle toe united at the base to the outer toe, but not to the inner toe; hind toe rather long; claws long, stout and curved. Body-plumage long and soft.

OUR little established favourite, the Wren, was long included among the Warblers; but more than fifty years ago certain ornithologists were pleased to remove it from that group, and to place it with some other birds in a congeries of heterogeneous forms, to most of which it has but a very superficial resemblance. Consideration of the chief characters possessed by the Wren and its natural allies shews that structurally they do not depart from the essential features of the *Passeres*, and even that they belong to the normal division of that great Order. In the arrangement of their feathers, in the form of their sternal apparatus, of their vocal muscles and of their palatal bones, and in all that pertains to their mode of reproduction, the true Wrens do not differ from other members of that section of the Order to which the name *Oscines* has often been applied, and were it not for some small though well-marked peculiarities, the genus *Troglodytes*, first proposed by Vieillot for the true Wrens, might still be kept in the family *Sylviidæ*. Few modern ornithologists of repute hesitate about restoring these birds to the neighbourhood of the Warblers, and the relationship of the two groups would possibly be thought still more intimate did not there exist in the New World a multitude of birds closely akin to *Troglodytes*, but leading as it were to many different forms, and only allied to the *Sylviidæ* through the species of *Troglodytes* which, inhabiting the northern parts of both hemispheres, are most familiar to us. Hence the distinct family *Troglodytidæ*, now adopted here, has of late years obtained a very general recognition, and, as families go among the *Passeres*, its claims can be very fairly substantiated.

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[*] Säugthiere und Vögel Baierns, p. 161 (1816).

[†] Fleming, Brit. Anim. p. 73 (1828).

[‡] Hist. Nat. des Oiseaux de l'Amérique Septentrionale, ii. p. 52 (1807).

Among our birds there is scarcely one that is better known, or more secure by privilege, than the Wren; frequenting as it does gardens close to our houses, and occasionally taking shelter in out-buildings, its confidence, like that of the Redbreast (with which in so many an adage it is coupled), seems to have induced and insured its protection. Trusting in this it often presents itself boldly before us, conspicuous for its pert postures its cocked tail and its clicking notes; but, when alarmed, it creeps mouse-like from our sight through hedges and underwood, occasionally flitting for a short distance, and again disappearing from view. The cock sings during a great part of the year with a shrill and lively strain, and sometimes even

"When icicles hang dripping from the rock,
Pipes his perennial lay;"

enduring a frosty winter's night by uniting and roosting in company in some sheltered hole of a wall or under a thatched roof—a fact which has been noticed by many observers. Sir William Jardine says that of an evening eight or nine Wrens may be seen entering one of these retreats, and, when all is quiet, the hand thrust into the hole will find them huddled together, surrounded by the feathers collected by the Sparrows, and the degree of heat thus kept up is much greater than their small bulk would at first be thought to maintain. Failing such refuges they will resort to their own old nests, and Selby says he has frequently found together the bodies of several, which had thus sought protection and warmth during severe storms. According to Herbert, also, under like circumstances and for like reasons they frequently roost in cow-houses.

The Wren begins to build its nest early in spring, choosing for the site very varied and occasionally odd spots. Often, as long ago remarked by Montagu, it first traces the outline of the structure by sticking bits of moss against the tree, bank, wall or other place selected, probably attaching them with spiders' web, and thus fastens all the parts with equal strength, afterwards enclosing the sides and top, and leaving only a small hole for entrance and exit. This, however, is not invariably the case, and sometimes it proceeds from the foundation upwards, as most other birds do. Mr. Weir has enriched Macgillivray's pages with a wonderfully accurate account (too long, unfortunately, to be here reprinted) of the building of a Wren's nest which he diligently watched. It was begun at 7 o'clock in the morning of May 30th, and the whole external workmanship completed by 7 at night. During the next few days the lining was carried in, and on the forenoon of June 8th the nest was finished. Many writers have remarked on the adaptation to the place of the materials used for the exterior. Thus, says Montagu, if built against the side of a hayrick it is composed of hay; if against a tree covered with white lichen it is studded with that material, and formed of green moss if against a tree overgrown with the same. Neville Wood declares that when this bird builds in a raspberry-bush the whole structure is composed of the leaves of that plant.

Jesse, in his 'Gleanings,' mentions a nest, among some litter thrown into a yard, which so nearly resembled the surrounding objects that it was only discovered by the birds flying out of it. Almost every observer must have noticed similar instances; but this prudence is not always shewn, and the Editor recollects a Wren's nest year after year in the hole of a wall, the bright green moss of which it was made always contrasting conspicuously with the blocks of white chalk with which the wall was built.

The nest is large in comparison with the size of the bird, generally oval in shape, and domed over the top, with, as before said, a small hole at one end or on the side; usually it is plentifully lined with feathers, but sometimes none are used. The Wren has a curious habit which does not seem as yet to be satisfactorily explained, though most authors have had something to say about it. Near any occupied nest may generally be found one or more nests of imperfect construction. The wide-spread belief in the country is that these are built by the male bird for his own lodging at night, and hence they are commonly known as "cocks' nests." Then it has been suggested that they are built to be used as houses of refuge in winter. Some persons imagine that they have been begun with the intention of being completed and occupied, but that owing to disturbance the builders have forsaken their work *. Other writers, again, maintain these nests to be the production of young birds without experience, but this seems the least plausible explanation that has been offered. The fact of such imperfect nests being frequent is unquestionable, however we may try to account for them.

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* Mr. Hewitson says that he has never known a Wren's nest "proceeded with after having been once discovered and touched." This does not agree with the Editor's experience, for he has found that, ordinary care being used, the Wren does not seem to be much more jealous than other birds. Mr. Weir's testimony is also to the same effect. He not only put his finger into the nest while it was building, but even barred the opening with a slender leaf-stalk, which the birds had to remove before they could gain admittance. Lord Walden tells the Editor of a Wren's nest in his garden which was blown from its site in an artichoke plant, was replaced by him, and reoccupied by the birds.

The eggs are commonly from six to eight in number, but twenty or more are said to have been found. They measure from ·71 to ·62 by from ·52 to ·47 in., and are white, generally with more or fewer light red spots and specks, but sometimes without any. The young are hatched after about ten days' incubation, during which time the male feeds the female while she remains on the eggs, and afterwards both parents are most assiduous in supplying their offspring with insects in their various states. Mr. Weir, whose observations on this species are the fullest that have been published, found that the young were fed at least 278 times in the course of the day. Two broods are not unfrequently produced in the season. In reference to the depth of the nest, and the number of young by which it is sometimes occupied—for it is said that as many as sixteen have been found in one nest—a remark taken by Ray from Nicholas Cox*, an author nowadays but little known, has been thus paraphrased by Grahame:—

"But now behold the greatest of this train
Of miracles, stupendously minute;
The numerous progeny, clamant for food
Supplied by two small bills, and feeble wings
Of narrow range; supplied, aye, duly fed,
Fed in the dark, and yet not one forgot!"

This little bird is generally dispersed over the three kingdoms, being common even in the Outer Hebrides and in Orkney, while a few breed in Shetland. In Norway it breeds as far as the Trondhjem Fjord, but in Sweden it goes even further to the northward, and reaches lat. 64° N. It also occurs in Finland in a parallel nearly as high, and Herr Meves found it in the large woods of north-western Russia. It does not seem to extend eastward of the Ural chain, but further south it is pretty common at Lenkoran, and its limits include Persia, where it was observed by De Filippi and Mr. Blanford. Specimens have been sent from Trebizond, and, though not common, it is resident in the northern hills of

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* The Gentleman's Recreation: In Four Parts: viz. Hunting, Hawking, Fowling, Fishing. Fourth Edition. London: 1697. Part iii. p. 65. The idea was traced to its source by Mr. Robert Gray.

Palestine. Returning westward it occurs in Crete, and pretty generally in all the islands of the Mediterranean, as well as in Algeria. Mr. Drake records it from Eastern Morocco, where he says he also saw a second species. Mr. Vernon-Harcourt gives it as occurring in Madeira, and Dr. Bolle in the Canaries, but Mr. Godman does not seem to have found it in either group of islands. It is a well-known bird throughout the rest of continental Europe.

The curious custom of "Hunting the Wren" has been mentioned by many writers; but little can be added to the accounts of it given by the late Sir Henry Ellis, in his notes to Brand's 'Popular Antiquities' (ii. p. 516), and by Thompson, though from its practice obtaining in countries far apart it is most likely of much greater antiquity than has been often supposed. It seems to have been first noticed by Charles Smith, in his 'State of the County of Cork' (ii. p. 334, note), published in 1750, as followed in the south of Ireland, and subsequently by Vallancey (Collectanea de Rebus Hibernicis, iv. no. 13, p. 97). On Christmas-day boys and men, each using two sticks, one to beat the bushes the other to fling at the bird, went out in a body to hunt and kill the Wren, which, from its habit of making but short flights, was no doubt soon done to death. On the following day, the feast of St. Stephen, the dead bird, hung by the leg between two hoops, crossed at right angles and decked with ribbons, was carried about by the "Wren-boys," who sang a song, beginning—"Droeilin, Droeilin, ri an t-eum" (that is—"Wren, Wren, king of birds"), and begged money "to bury the Wren *". This ceremony, which, however it may have arisen, had become quite senseless, was, when Thompson wrote, falling into disuse, and in 1845 the then Mayor of Cork by proclamation forbade its continuance. Mr. Halliwell (Nursery Rhymes, Ed. 2, p. 248) notices the same practice in the Isle of Man, and gives the words there sung; while on February

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* To Mr. Norman Moore the Editor is indebted for the Erse words of the song above quoted. In Mr. and Mrs. S. C. Hall's 'Ireland: its Scenery, Character,' &c. (i. pp. 23-25), the entire English version, as sung in the county Cork, is given, together with the musical notes of the tune.

4th, 1846 (as appears by the 'Literary Gazette,' p. 131, of the 7th of that month), Mr. Crofton Croker drew attention to the subject at a meeting of the British Archæological Association, and it was stated that a similar custom existed in Pembrokeshire, where on Twelfth-day a Wren was carried from house to house in a box with glass windows, surmounted by a wheel, to which ribbons were hung. Sonnini (Voyage dans la Haute et la Basse Égypte, i. p. 18) mentions a like ceremony practised a century ago, towards the end of December, at La Ciotat near Marseilles, but there the Wren's murderers were armed with swords and pistols, and their victim was slung to a pole borne, as if it were a heavy load, on the shoulders of two men, who paraded the village, and then, after gravely weighing it in a great pair of scales, all gave themselves up to festivity[*].

The bill has the upper mandible dark brown, the lower pale wood-brown: the irides hazel: over the eye and ear-coverts runs a streak of dull white; the upper parts generally are reddish-brown, with narrow transverse bars of dark brown, some of the upper tail-coverts with a whitish spot, which is commonly hidden, in the middle; the wings and tail rather more rufous than the back, and more distinctly barred; the greater wing-coverts with three or four small white spots; primaries barred on the outer web alternately with pale buff and dull black; chin and throat plain greyish-buff, becoming browner on the belly; flanks, and under tail-coverts, light reddish-brown, indistinctly barred with darker brown; the lower tail-coverts tipped with dull white: legs, toes and claws, light brown.

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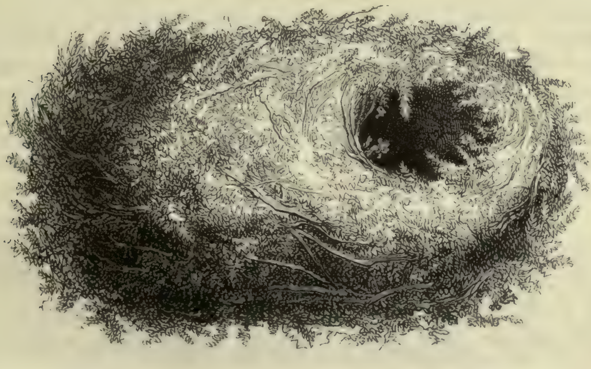
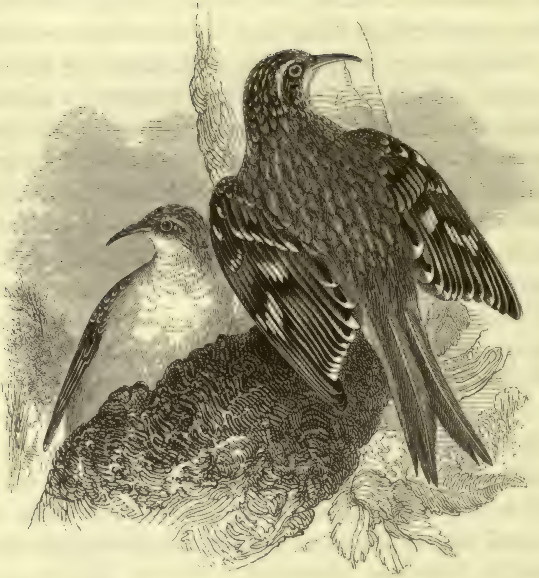
[*] It is for antiquaries to throw light on the origin of this widely-spread custom, of which many unsatisfactory explanations have been attempted. It has been ascribed to a Wren which, alighting on a drumhead, roused and saved from defeat some Protestant troops in the Irish civil wars of the seventeenth century. Others refer it to a similar incident some centuries earlier, in the wars of the Danish occupation of Ireland. Others say that the Wren was an object of so great veneration to the "Druids," that the early Christian missionaries enjoined its persecution upon all adherents to the new faith. Any speculations would here be futile, though one cannot but be struck with some coincidences. The Wren in the first line of the Irish song is called the king of birds. The Pembrokeshire ceremony was or is performed on Twelfth-day—the feast of the Three Kings, and the bird was also spoken of as the king. The common name of the bird, shared to some extent with the Golden-crested Wren, in most European languages—*Basilískos*, *Regulus*, *Reyezuelo*, *Reatino*, *Roitelet*, *Zaunkönig*, *Kungsfogel*, *Ellekonge*, *Winterkoninkje* and so forth—all assign to it the kingly dignity. These names probably are connected with the old and well-known fable of birds choosing for their king that one of them which should mount highest in the air. This the Eagle seemed to do, and all were ready to do him homage, when a loud burst of song was heard, and perched upon the Eagle's head was the exultant Wren, which unseen and unfelt had been borne aloft by the giant. In England this story does not seem to have had hold, and so far from ascribing royal qualities to our little favourite, it is nearly everywhere known to us by the humbler name of "Kitty" or "Jenny" Wren.

The whole length of the bird is rather less than four inches. From the carpal joint to the end of the wing, one inch and seven-eighths.

The female is smaller, less bright in colour, and browner beneath than the male.

The Wren of Iceland and the Færoes, for a long time deemed identical with our own, has of late been justly separated under the name of *Troglodytes borealis*. It is more barred beneath and is unmistakably larger—its eggs even shewing this last character. Of the North-American species, one, *T. hyemalis*, much resembles our own, but its bill is stouter and straighter. The Japanese *T. fumigatus*, which has occurred in China, is still more like our bird, but its distinctness is recognized by most authorities.





CERTHIA FAMILIARIS, Linnæus *.

THE TREECREEPER.

Certhia familiaris.

CERTHIA, Linnæus †.—Bill rather long, slender, compressed, curved downwards and pointed; nostrils basal, lateral, elongated and partly covered by a membrane. Wings moderate and rounded; the first feather short, the third and sixth about equal, the fourth and fifth longest. Tail-feathers, twelve in number, long, stiff, pointed and slightly curved downwards. Feet large, the tarsus slender; the fore toes long and united at the base as far as the first joint, their claws moderate but much curved; the hind toe short, but with a long curved claw. Plumage soft and thick, especially above.

THE TREECREEPER is one of the smallest British birds, and though rather numerous, is not very readily observed, partly from its diminutive size, its unobtrusive ways and its modest colours, and partly from its habit, when approached, of shifting round to the opposite side of the stem or trunk of the tree whereon it is seeking its food. Aided by its long, curved and sharp claws, and at times by its peculiarly-formed tail-feathers, it is an excellent climber, running rapidly, but by jerks, in a spiral direction over the bark of trees, whether it be rough or smooth, searching for small insects of all sorts, but especially for spiders and others which lurk in the crevices, picking them out with its slender bill, but occasionally varying its diet with the seeds of the Scotch-fir. Having traced its ascending course over one tree, it takes flight to the next for the same purpose, almost invariably beginning at the foot and working upwards. Thus it procures its living; on a level or slanting branch as often as not travelling with its back downwards, and, when the branch becomes small, dropping suddenly and, with an undulating flight, seeking the next tree, there to resume its spiral ascent. This bird inhabits groves, plantations, and woods, and is especially partial to the examination, in rapid succession, of a line of trees growing near to each other, as when forming the side of an avenue.

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* Syst. Nat. Ed. 12, i. p. 184 (1766).

† *Loc. cit.*

The Treecreeper generally makes its nest on the inner side of the loose bark of a decayed tree: the vignette at the end of this article exhibits such an example, for the opportunity of figuring which I am indebted to the kindness of Mr. T. F. Robinson, of Havering-atte-Bower, in Essex, near which it was taken. It was supported on the inner surface of a thick piece of the bark of an elm which had been detached from the tree, and thus afforded the view here given. The nest itself was formed on the outer surface with small twigs, within which there was a thick layer of fine grass mixed and lined with black wool, and a few small dark-coloured feathers. This may be regarded as an instance of a most naturally-built nest of the species, but it is a bird which readily avails itself of other sites, and in particular of such as are afforded by a shed or hovel of rough slabs, or the piles of timber in a wood-yard, where the poles, crossing each other as they lean against some support, offer a secure niche; while again, as long ago noticed by White of Selborne in the miscellaneous observations selected from his manuscripts and published in Jesse's 'Gleanings' (ii. p. 170), the bird will build its nest behind the loose plaster of a wall. In general no preference is shewn for a lining of a sombre hue. The Treecreeper is an early breeder, laying from six to nine eggs in the month of April: they measure from ·68 to ·58 by from ·48 to ·45 in., and are white, spotted or blotched with reddish-brown, and occasionally with dull purple, interspersed with numerous fine dots, very generally confined to the larger end, but sometimes extending over the whole surface. The song of the Treecreeper is loud and pleasing, though not often heard, and pitched in a high, shrill key. Its notes have been compared to those of the Golden-crested Wren, the family-parties of which species it often accompanies, especially in winter.

The Treecreeper is distributed generally over Great Britain, and those districts in Ireland in which old wood prevails, but it has not been satisfactorily traced to the Inner Hebrides, and is undoubtedly absent from the Outer islands of that group, though it has been occasionally found in Orkney. If it is migratory with us its movements have not attracted attention. In Norway it is common in the lower fir-woods, at least as far as Trondhjem; in Sweden it reaches Meddelpad, and though not common, is a resident in about the same latitude in Finland. In north-western Russia it is said to be not rare, and thence it is found, but apparently only at intervals, across to the Sea of Ochotsk and in Japan. Its southern limits in Asia are unknown, but it has occurred at Pekin in winter, and Mr. Swinhoe says the specimens are indistinguishable from our own. In Europe it is found near Odessa, but only in winter, and in Turkey and Greece. As to its appearance in Italy some doubt may be entertained, for the Treecreeper there found has been regarded by many ornithologists as distinct, but it is said to breed in Algeria and in the Iberian Peninsula. In France, Germany and the adjacent countries it is sufficiently numerous.

According to the older writers on American ornithology, this bird was considered to inhabit the northern parts of the

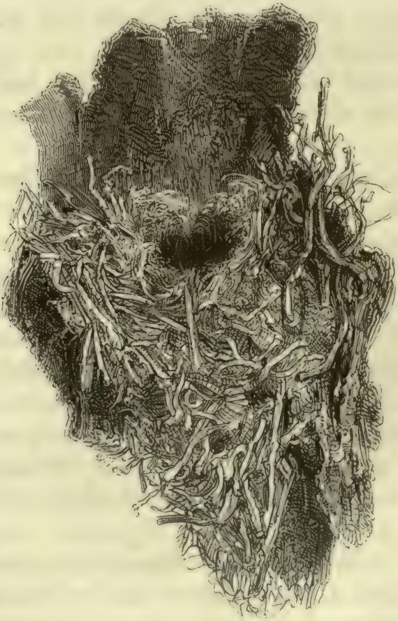
New World, but nearly all the more recent authorities concur in regarding the two species of Treecreepers found in America as distinct. One, the *Certhia mexicana*, clearly is so, but the other, *C. americana*, differs little from our own bird, though it would seem to be smaller, with a somewhat shorter bill, a comparatively longer tail, and, except on the rump, it has much less of the rusty tinge that pervades the upper parts of *C. familiaris*, which may be thus described.

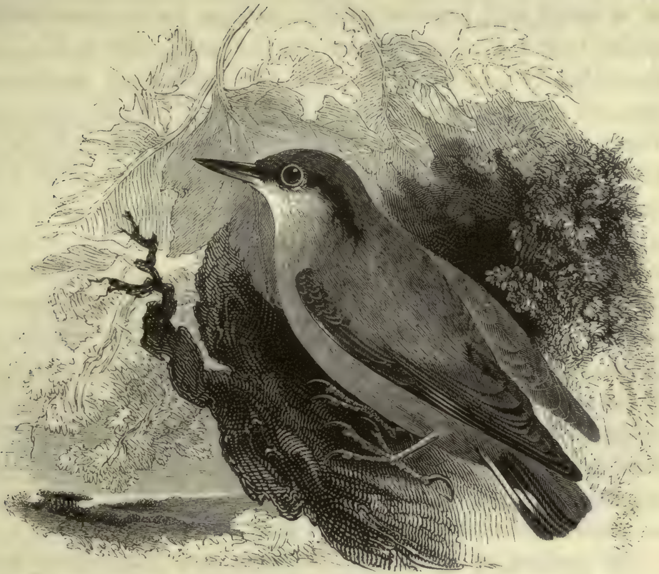
The bill has the upper mandible dark brown, the lower pale brownish-yellow: the irides are hazel: over the eye a light-coloured streak; head above dark brown, the middle of each feather being pale wood-brown; neck and back yellowish-brown, streaked with greyish-white; rump reddish-tawny; wing-coverts brown, tipped with dull white or tawny; wing-quills barred with pale brown and greyish-black, and all but the first five or six tipped with dull white; tail-feathers reddish-brown, with obsolete bars of a darker shade, their shafts pale yellowish-brown; chin, throat, breast and belly, silvery-white; flanks and vent generally tinged with rufous: legs, toes and claws, light brown.

The whole length is rather more than five inches. From the carpal joint to the end of the wing, two inches and three-eighths.

A second European species, as above said, has been often asserted to exist, but its distinctness may well be questioned. It has been variously designated *Certhia nattereri*, *C. costæ* and *C. brachydactyla*. In the Himalayas there are however three very distinct species:—*C. discolor*, from Sikhim, though in locality furthest removed, seems in some respects to make the nearest approach to our own, from which it differs by its conspicuously shorter bill and longer tail; *C. nipalensis*, with well-defined tawny-white spots, especially on the head; and *C. himalayana*, from the north-western parts of the range, and easily distinguished by its strongly barred tail and tertials.

The genus *Certhia* since its establishment has been universally recognized, though many of the birds assigned to it by older authors have been most judiciously removed thence, and some of them placed in very different families. The affinity between the species of *Certhia* as now restricted and some of the true Wrens is very evident, and on the other hand, through several exotic genera, a transition may be easily traced to the next family to be mentioned, the *Sittidæ*. Those ornithologists who unite *Certhia*, *Sitta* and the intermediate genera in one family may be justified, but the systematists who place the Treecreepers near the Woodpeckers take a very erroneous view of the characters which really determine the affinities of birds. The *Picidæ* possess no structural character in common with the *Certhiidæ* as a whole which is not shared by many other families that no one has ever thought of allying to the former, for the stiffened tail-feathers are only found in some forms of the latter and not generally. There is no doubt, it is true, of the two groups having certain somewhat similar habits, but these do not go far in classification.





SITTA CÆSIA, Wolf *.

THE NUTHATCH.

Sitta Europæa †.

SITTA, *Linnæus* ‡.—Bill moderate, strong and compressed, the culmen very slightly arched, the gonys ascending towards the point. Tongue short and horny, the tip abrupt and furnished with strong bristles. Nostrils basal, rounded, placed in a deep hollow, covered by hairs and short feathers. Legs short and stout; the tarsi scutellated; toes long and strong, the hind toe especially, the outer toe joined at its base to the middle toe; claws large and much hooked. Wings rather long; the first feather much shorter than the second, the fourth or fifth the longest. Tail short, flexible, broad and nearly even.

OUR well-known Nuthatch was long considered the sole example of its genus in Europe, but not only have other well-marked species been discovered within the limits of this quarter of the globe, but our bird has been shewn to differ from that which was described by Linnæus sufficiently to require recognition as a distinct form. The Nuthatches are a small and peculiar group, having an unquestionable affinity to the Treecreepers on the one hand, and to the Titmouse-family on the other, but possessing no structural character which can justify their being placed near the Woodpeckers, as has commonly been done. The birds of this genus, by means of their powerful feet—for their tail-feathers do not, as in the Treecreepers, afford them any support—climb with short quick jerks over the bark of trees or the surface of rock, with equal ease in any direction—sideways, upwards or downwards, their motions more resembling those of a mouse than of a bird. Our species of Nuthatch is an interesting bird, and a great favourite with all its observers; it inhabits woods, plantations and parks, particularly such as contain old oaks, beeches and other large forest-trees. It is resident here all the year, approaching orchards and gardens in winter; but no wider migratory movement seems to have been recorded.

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* Taschenb. deutsch. Vögelk. i. p. 128 (1810).

† Not *Sitta europæa*, Linnæus.

‡ Syst. Nat. Ed. 12, i. p. 177.

The names of Nuthatch, Nuthack and Nutjobber have been given to this bird from its habit of feeding at one season of the year on the kernels of hazel-nuts. These it plucks from the bough or seeks when they have fallen to the ground, and flies with them between its mandibles to some tree or post, cleverly fixing them as though in a vice in some angular chink or crevice. It then hammers with the point of its bill at the shell until that is broken. Each stroke is delivered with the bird's full strength, and, working as it does from the hip-joint, the whole weight of its body is added to the force of the blow. While thus noisily employed—for the sound of the strokes can be heard at a considerable distance—it will often admit of very near approach, and the observer may then admire the skill with which the little workman will spring after any piece of the kernel that may be driven off by the violence of the blow, catch the morsel in the air, and quickly return to its occupation. The same feat is performed should the whole nut, not being at first tightly fastened, fly off, and then a new attempt is made and perhaps a fresh chink sought. It treats beech-mast and other hard seeds, such as those of the yew or fir, and even cherry-stones, in like manner; but beech-mast give the least trouble, and in seasons when they are plentiful the Nuthatch fares well. Acorns are sometimes but not often used, and in times of scarcity it will feed on corn. All these vegetable products, however, form its chief diet for part of the year only; during the remainder it is unremitting in its search for insects, alike on the boles and the boughs of trees, while it may be occasionally seen on the ground turning over dead leaves for the prey lurking beneath them.

The call of the Nuthatch is a loud double note, "twi-twit, twi-twit," frequently repeated; but it varies in tone with the season, and in spring the cock has a prolonged, shrill whistle, which, once heard, cannot be mistaken, though it is impossible to describe. This is continued until the young are hatched, when the parents become silent, or only utter an occasional cry as the family party busily explore their ancestral trees.

The Nuthatch almost always makes its nest in the hollow branch of a tree, plastering up the opening with clay, so as to leave a circular hole only just large enough to afford entrance and exit *. The clay is often brought from a distance, and being possibly tempered with the bird's saliva, soon hardens so as to withstand rain and sun. If this barricade be destroyed while there are eggs in the nest, it is speedily rebuilt. A passage of some length leads to a chamber, bedded sometimes with dry leaves but oftener with filmy flakes of the inner bark of a fir or cedar, to gather which the birds will make distant journeys. Here the eggs, from five to seven in number, are laid. They are white,

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* As singular deviations from the Nuthatch's usual choice of a site for its nest may be mentioned, first, the case communicated to Mr. Hewitson by Mr. A. C. Smith, in which a pair for many years occupied a hole in a wall caused by the omission of a brick. This large aperture they filled with clay and small stones, leaving a small orifice by which to enter; secondly, the more extraordinary nest, described by Mr. Bond (Zool. s. s. p. 2850) as placed in the side of a haystack, where the mass of clay weighed no less than eleven pounds, and measured thirteen inches by eight. The Editor has seen both these structures, the latter of which is in the British Museum.

spotted and blotched, sometimes boldly, with reddish-brown and occasionally dull purple, and measure from ·83 to ·7 by from ·59 to ·53 in. Should the nest be examined while the hen is sitting she makes a resolute defence, hissing like a snake and using her sharp bill against the invader's fingers so as sometimes to draw blood.

The actions of this bird are very amusing, and where it occurs it may easily be induced to come under observation by fixing a few nuts in the bark of any suitable tree, the supply being renewed as wanted. The kernel of a nut pinned to the bark is sure to tempt a visitor, and if this be done within sight of a window, the bird's habits may be most conveniently watched *. Crusts of bread, no matter how hard, exposed in winter on a window-sill, likewise attract this species, and great pleasure may be derived from seeing the way in which the bird will carry off a piece half as big as itself to eat it at leisure. The quantity thus consumed is enormous. There is, however, the disadvantage of the Nuthatch driving away almost every other recipient of such doles—the pugnacious Redbreast not excepted. No true naturalist need be told that the mode just described of studying the habits of this species is far better than trying to cage it. The old birds, indeed, will not bear confinement at all, and, though readily eating almost anything that is

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* Some very interesting observations thus made are recorded (Zool. p. 213), by Mr. J. C. Atkinson. Almost daily for two years he watched a pair which resorted to an old mulberry-tree, standing about eight or ten feet from a window. "They were there the first thing in the morning, and apparently the last thing before going to roost. Seeing that the nuts were carried away whole, I began to crack them, and fix the kernel only in the crevices, or by means of pins, to the tree. The greater part of the nuts were now eaten on the spot; occasionally, when a large piece was got, the birds flew away with it to some tall trees close by, but very soon returned for more. Their absence on these occasions was very short, certainly not long enough to lead me to suppose they had time to eat the nut; I concluded it was either added to a store already existing, or deposited on the tall trees" The cock would never allow the hen to feed at the same time that he was feeding, though in the breeding season he would feed her with much apparent tenderness. "Latterly these birds became so tame as to sit within two feet or so of my head, while I was preparing their feast, and if I threw a nut into the air to them, they would fly after and catch it. They took dozens in this way."

given them, they soon kill themselves through their unceasing efforts to escape. The young, however, may be reared with less risk, and Sir William Jardine, in a note to his edition of Wilson's 'American Ornithology' (i. p. 37), relates his having seen a brood in captivity which had become remarkably tame, and, when released from their cage, would run over their owner in all directions, up or down his body and limbs, poking their bills into seams or holes, as if in search of food, and uttering, during the time, a low and plaintive cry. "When running up or down," he says, "they rest upon the back part of the whole tarsus, and make great use as a support, of what may be called the real heel, and never use the tail." He further adds that when roosting, they sleep with the head and back downwards, as do most species of Titmouse—a statement which has been corroborated by Mr. Blyth.

The Nuthatch is found pretty commonly in most of the wooded parts of southern, eastern and central England, and though more local and rare in the north-western and northern counties, may be said to breed regularly throughout the country. It is not found in Ireland, and in Scotland its appearance is merely accidental; of late years, according to Mr. Gray, it has only occurred thrice, once in Berwickshire, once in Haddingtonshire and once in Bressey, one of the Shetlands*; but it has been formerly recorded from Perthshire and Forfarshire. On the continent its most northern limit seems to be Jutland, and it is found on the island of Funen, where also *Sitta europæa* occurs, but on the other Danish islands the latter entirely replaces it. It inhabits the whole of Germany, and probably the southern parts of Russia, but even near Moscow the northern form only seems to exist. Of its range further eastward all that can at present be said with certainty is that Mr. Blanford obtained it in Persia. A red-bellied Nuthatch indeed is found in southern Siberia and on the Amoor, but, as Mr. Dresser suggests, it may possibly be the bird lately described by Mr. Brooks as *S. cashmirensis*, though that seems to differ little from *S. cæsia*, and chiefly in wanting any white on the lower tail-coverts. Canon Tristram obtained an example of the latter in Palestine, and Strickland did the like at Smyrna. It inhabits the mainland of Turkey and Greece, and thence westward throughout the remaining countries of continental Europe, occurring also in Sicily but not in Sardinia. It is also found in Algeria, where it is said to breed, and it has been included among the birds of the Canaries, but, as Dr. Bolle thinks, erroneously.

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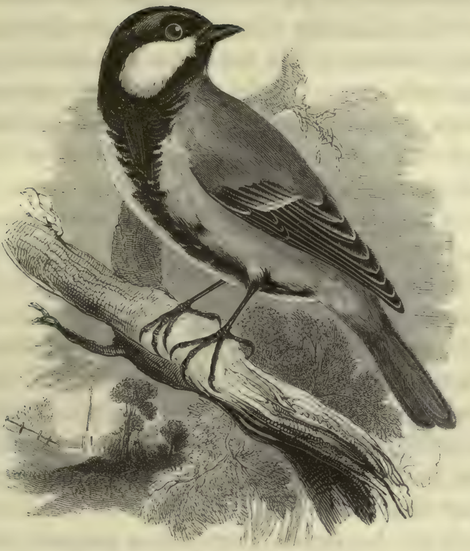
* This specimen does not seem to have been examined by any one aware of the differences between *Sitta cæsia* and the northern *S. europæa*. It may possibly have belonged to the latter.

The bill is bluish-black, except the base of the lower mandible, which is whitish-brown: irides hazel: a black streak runs from the base of the bill to each eye, and thence backward along the side of the neck; top of the head, neck, back, lesser wing-coverts, rump and the two middle tail-feathers, uniform bluish slate-colour; the greater wing-coverts and wing-quills dark slaty-brown, the outer webs tinged with blue; the remaining tail-feathers black for about three-fourths of their length, grey at the tip, with a white patch between these two colours on the three outer feathers of each side; the chin and sides of the head white, passing into buff on the throat, the colour becoming deeper on the breast and belly; flanks and lower tail-coverts light chestnut, the latter broadly tipped with white: legs, toes and claws, light brown.

The whole length of the male described rather less than six inches; from the carpal joint to the tip of the wing, three inches and one-quarter; the second primary rather longer than the seventh, but shorter than the sixth; the third, fourth and fifth nearly equal in length, but the fifth rather the longest.

In the true *Sitta europæa* the upper parts are brighter, the throat, breast and belly are pure white, and the legs, toes and claws lead-colour.



Parus major, Linnæus[*].

THE GREAT TITMOUSE.

Parus major.

Parus, *Linnæus*[†].—Bill moderate, strong, straight, rather conical, slightly compressed, upper mandible hardly longer than the lower, and not notched. Nostrils basal, round, covered with reflected bristly feathers. Wings with ten primaries, the first short; the second shorter than the ninth; the third equal to the seventh; the fourth or fifth the longest. Tail moderate, even or slightly rounded. Legs, with the tarsus moderate and scutellated; feet strong, the anterior toes united to the second joint, the outer toe longer than the inner; the hind toe strong, and armed with a stout, hooked claw.

Some of the species of the genus *Parus* are remarkable for the beauty of their colours, and the well-defined character of the markings, while others again present a very sombre appearance; but all attract attention from their vivacity, garrulity and ceaseless activity. They are indefatigable in their search for food; and, being fearless in disposition, may be readily observed roving in bands from tree to tree or from bush to bush, alighting equally on a sturdy branch or a slender twig, fluttering for a few moments beneath the boughs, or hanging back downwards by their strong toes and hooked claws, while examining every cavity, leaf or bud, that is likely to afford shelter to any of their numerous insect-prey. The Great Titmouse, often called the Oxeye, the first of the genus to be here considered, is said to have been known to kill birds of its own size, accomplishing that end by repeated blows of its hard and sharp bill on the skull of the victim, and afterwards picking out and eating the brains. Whether this story be true or not, the species certainly seldom indulges in the practice except when caged, and its food mainly consists of insects in their various stages, with, in autumn and winter, a variety of hard seeds, which it cracks much in the way of the Nuthatch already described, but without the same dexterity as that bird.

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[*] Syst. Nat. Ed. 12, i. p. 341 (1766).

[†] *Tom. cit.* p. 340.

In England the Great Titmouse is seldom seen on bleak open ground, but inhabits woods, gardens or enclosed and sheltered districts generally. In winter it approaches nearer the habitations of men, and may be seen in hard weather closely examining the thatch of old buildings in search of the many small flies that harbour there. As the Great Titmouse is an early breeder, the lively chirping notes of the male are heard at the beginning of February; and, though hardly to be called harmonious, they must yet be considered a true song, since they cease with the hatching of the young, but should a second nest be built they are recommenced, only in a somewhat different key. These notes are very varied, and include some which are very harsh and much resemble the noise made in sharpening a saw, so that in many parts of England the bird is commonly known by the name of Sawsharper. As a whole the song is more remarkable for cheerfulness and frequent repetition than for quality of tone. The nest consists of a foundation of soft moss, on which is a thick layer of short hairs almost felted into a mass, some feathers being often added. It is usually built in the hole of a tree or of a wall, but many other sites—some of them more or less odd, such as the inside of a pump or an inverted flowerpot—are frequently chosen, and occasionally the bird is said to avail itself of the deserted nest of some larger species, which it adapts to its own purposes. Sometimes it would seem to excavate a hole for itself in a rotten stump or dead tree, and its eggs have been found lying on the bare wood without any bedding. They are from six to nine in number, very variable in size, since they measure from ·75 to ·6 by from ·67 to ·47 in., and are pure white or white tinged with yellow, blotched, spotted or speckled with light red, the markings, as in the eggs of nearly all the species of the genus, being pretty evenly, but seldom thickly, distributed over the whole surface.

The bird is common throughout most parts of Great Britain, breeding in every county as far as Sutherland, but, according to Mr. Gray, is much less numerous to the north of Argyleshire. It is never seen in the Outer Hebrides, but it occurs, though rarely, in Shetland. In Ireland it is common and resident. It is found over almost the whole of Europe, going even beyond the Arctic Circle, though scarce so far to the northward. Thence it would seem to extend across Siberia, becoming less common towards the east. Dr. von Middendorff obtained specimens (which differed but slightly from European examples) in midwinter on the shores of the Sea of Ochotsk. It was formerly thought to inhabit Japan, but the distinctness of the species of that country (*Parus minor*) is now generally allowed. The southern limits of our bird in Asia are not known; Mr. Blanford, however, informs the Editor that it is very common in gardens at Shiraz, Abbott sent specimens from Trebizond, and Canon Tristram found it abundant in Palestine. Strickland obtained it at Smyrna, and Col. Drummond-Hay says it is common in Crete. It seems to occur in most of the islands of the Mediterranean, and is common in Algeria, where it breeds. It also inhabits the Canaries, but is rare there.*

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* Bishop Stanley (Fam. Hist. of Birds, i. p. 95) quotes from Forster's 'North America' an instance of this species having been observed in the Atlantic (lat.

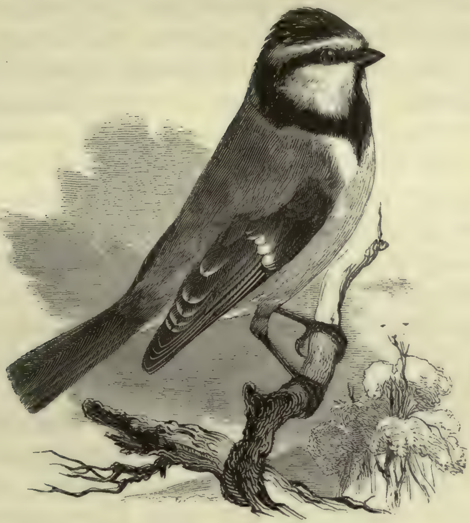
The Great Titmouse seems to be resident in most of the places it frequents, but indications of its being subject to the migratory impulse are here and there to be found, and such have been noticed in England, though to a much less extent than is the case with birds generally, the various species of Titmouse excepted.

The bill is black: the irides dusky brown: the top of the head is black, with a greenish-blue gloss, a band of the same colour descends each side of the neck behind the cheeks and ear-coverts, which are white; on the nape is a whitish spot, which passes into yellowish-olive, and this becoming more dusky prevails over the mantle; rump and upper tail-coverts bluish-grey; lesser wing-coverts greyish-blue; greater wing-coverts bluish-black, edged with greyish-blue and broadly tipped with yellowish-white, forming a conspicuous bar across the wings; quills bluish-black, those of the wing edged with light greenish-blue, which is broadest on the tertials, those of the tail darkest on the inner web and indistinctly barred with a deeper shade; the outer pair of tail-quills white on the outer web, and at the tip of the inner web; the chin and throat glossy black, meeting the black band on the sides of the neck and continued in a broad stripe along the mesial line to the vent; the sides of the breast and belly, and the flanks, dull sulphur-yellow; lower wing-coverts dull white; the quills beneath, shining grey; lower tail-coverts white and black: legs, toes and claws, lead-colour.

The whole length is rather less than six inches. From the carpal joint to the end of the fourth and longest primary, two inches and seven-eighths: the third and fifth primaries are nearly equal to the fourth.

The female does not differ much from the male; but her colours are less bright, and the black stripe down the breast and belly is not conspicuous. In the young the darker colours are much more dingy and the white is tinged with yellow.

40° N. long. 48° W.), nearly half way between the Azores and the American coast, but the Editor has not been able to consult the original authority for the statement, which seems open to suspicion.



Parus cæruleus, Linnæus*.

THE BLUE TITMOUSE.

Parus cæruleus.

The Blue Titmouse, like the species last described, is generally distributed in this country, and being very common its beauty and sprightliness are on that account not so highly appreciated as they deserve. It frequents woods, hedgerows, orchards and gardens, often entering our towns, and remains with us throughout the year. There are few birds which are commonly believed to do more harm than this, and by nearly all gardeners it is regarded as one of their worst foes. They see it busily at work on a fruit-tree—bud after bud coming under its scrutiny, while the protective covering of each drops on the ground and shews the destruction done. Content with such imperfect evidence, they go their way vowing vengeance on the Bluecap, and when they get the chance are mostly as good as their word.

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* Syst. Nat. Ed. 12, i. p. 341 (1766).

In many parishes in England a price not long since used to to be paid by the churchwardens for the heads of this species and its congeners under the general name of Tom-tits, on account of the loss they were believed to inflict on the gardeners. Yet none can be more mistaken than these men. If they watched more closely they would see that while all the buds were looked over some of them only were picked open. Often a single bird or the whole family-party will alight on a tree, and, after a very brief survey, will go on to the next, where perhaps a prolonged stay will be made. To man's eyes the two trees are just alike and the buds at the same stage of growth—there is no seeming difference between any two on the same bough. The bird however knows better: the germ of the one is sound, that of the other infected, and hence the choice it uses. Hardly any portion of the bud itself is eaten; the egg or the insect already lodged there is the morsel sought. The bud of course when picked open is in most cases utterly destroyed, but with it is also destroyed the potential destroyer of more buds than any one can tell. The damage of which the gardener thinks he sees the doing has really been done before, perhaps some months before. There can in truth be little doubt that this Titmouse with others of the genus is a very great benefactor to the horticulturist, and hardly ever more so than when the careless spectator of its deeds is supposing it to be bent on mischief.

The evidence of numerous attentive observers might be adduced in support of the statement just advanced. Thus Selby says that he is convinced of the accusations having been "inconsiderately made." Knapp gives details of the numbers of insects the Bluecap destroys, and declaims against the custom of rewarding its destruction. Mr. Weir with his usual perseverance observed that a pair fed their young 475 times in the space of seventeen hours, sometimes bringing a single large caterpillar, at other times two or three small ones. Thompson, who examined the stomachs of a number of examples from December to March, finding them to contain the remains of insects and very few of them any vegetable food, remarks that this bird is "savagely slaughtered" in the very act of saving the buds by means which man with all his power could not employ. Mr. Stevenson also justly observes of the hatred to the bird shewn by gardeners that "even the most obstinate of that opinionated race need but dissect the next victim of his folly to know that he has killed a friend." Finally Mr. Bond has supplied Messrs. Sharpe and Dresser with the results of his experience to the effect that this Titmouse feeds its young very much with the small larvæ of the gooseberry-moth—that well-known ravager of gardens, to say nothing of *Aphides* and other insects, while it also preys on the grubs of the wood-boring beetles, including *Scolytus destructor*—the worst foe of the elm, and on maggots from the round galls so common on young oaks.

Insects, in their various stages, and of many different kinds, thus are the principal food of the Bluecap throughout the year, and though it has been often credited with eating corn, small seeds* and other vegetable matter, especially in winter, the assertions that it does so seem to be rather founded on exceptional instances, if they do not rest on imperfect observation. But flesh or fat is very attractive to it, and it is a constant visitor to the carrion hung up near dog-kennels. When searching for food, which is its almost incessant occupation, it is far from shy, while from its restless inquisitiveness, the grotesque postures it assumes, and its cheerful calls, there are few birds which are more amusing to watch. Its notes vary much with the season of the year, and those uttered by the cock in spring must be deemed a song, though its best vocal efforts possess but little melody.

The Blue Titmouse generally builds in a hole in a wall or a tree, almost always shewing a preference for one with a very narrow opening: the nest is much like that of the last species, but feathers are more commonly and largely used, and the felted mass of hairs is sometimes almost wanting.

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* The allied species no doubt eat some seeds and are especially fond of those of the sun-flower, but Mr. Blyth says (Field Nat. i. p. 269) that he has never known this bird touch them, or in confinement eat the seeds commonly given to cage-birds.

The eggs are said to be occasionally sixteen or eighteen in number, but not more than seven or eight are most usually found. They are white, finely spotted or speckled with light red, but perhaps less so than those of any other British species of Titmouse, and measure from ·62 to ·54 by from ·47 to ·43 in.

When the Blue Titmouse has taken possession of a hole, she is not easily induced to quit it, but defends her nest and eggs with great courage and pertinacity, puffing out her feathers, hissing like a snake, and trying to repel the fingers of the intruder in such a way as to gain for her among birds'-nesting boys in some parts the name of "Billy Biter".* The branch containing the nest may even be sawn off and conveyed to a distance (a cruel experiment) without the mother leaving it, and cases have been known in which, when this has been done, she has still continued to sit on her eggs, hatch them, and rear her brood. With equal persistence will this species year after year use as a nursery the same hole, and a remarkable instance of this kind is on record. In 1779, according to one account, in 1785, according to another, it is said that a pair of these birds built their nest in a large earthenware bottle which had been left to drain in the branches of a tree in a garden at Oxbridge in the township of Hartburn, near Stockton-on-Tees, and safely hatched their young. The bottle having been allowed to remain in the same position by the occupiers of the farm, then and still a family of the name of Callender, was frequented, for the same purpose and with a like result, until 1822, when, the tree becoming decayed, the bottle was placed in one near by, and the tenancy continued until 1851. In that year the occupiers of the farm omitted drawing out the old nest, as had been their constant practice before the breeding season, and in consequence the birds chose another place; but in 1852, they returned to the bottle, and have since annually built in it or in a second bottle, which has lately been placed close by it, up to the present year, 1873 with the exception of one season when a pair of the Great Titmouse took possession of their inheritance. The intruders were shot, and the tenancy it is hoped will not be again disturbed.*

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* By some writers this name is given as "Willow-biter."

The general distribution of the Blue Titmouse in this country is shewn by the fact that it breeds in every county of Great Britain from Cornwall to Caithness. It is said to be the only species of Titmouse which has been noticed in Orkney, and there only once, but Dr. Saxby includes it among the birds of Shetland. It is very common, more so than any other of the genus, in Ireland. Its range in Norway seems to be at present undecided, but Herr Collett, in 1871, found it breeding in lat. 64°, though it is scarce beyond Trondhjem. In Sweden Prof. Sundevall says he has no certain assurance of its occurrence further north than lat. 61°. In Finland it seems to be most commonly seen in spring and autumn but its nest is only known to have been once found. Herr Meves says that it is supposed to have occurred near Archangel, but it does not appear to have been recorded from any other locality in Northern Russia, and it even migrates in winter from the western and southern parts, while it is not found beyond the Ural. It was observed by Ménétries at Lenkoran, and by Messrs. Dickson and Ross at Erzeroom and Tortoone. De Filippi supposes that he noticed it breeding at Kasvin, but the Blue Titmouse of southern Persia has, from its duller colouring, been lately described by Mr. Blanford as a distinct species under the name of *Parus persicus*. Strickland procured it in Asia Minor. It does not seem to occur in Palestine nor in any of the islands of the Egean, though it is more or less common in Turkey, continental Greece and Crete. Thence it is found throughout the remainder of Europe, and the more western islands of the Mediterranean, being replaced however in North Africa and the Canaries by the brighter-coloured *P. teneriffæ*.

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* The kindness of Mr. James Clephan enables the Editor to say that the earliest published record of this nest was in the 'Newcastle Courant' of May 1st, 1819, the date there assigned for the first tenancy of the bottle being 1785; but Mr. Heavisides, who had resided in Stockton from 1814, gives it as 1779 (Ann. Stockton, p. 189). Thanks to Canon Tristram, the later particulars were gathered on the spot by the Editor. This case may be compared with that of the Falcons before mentioned (page 58, note).

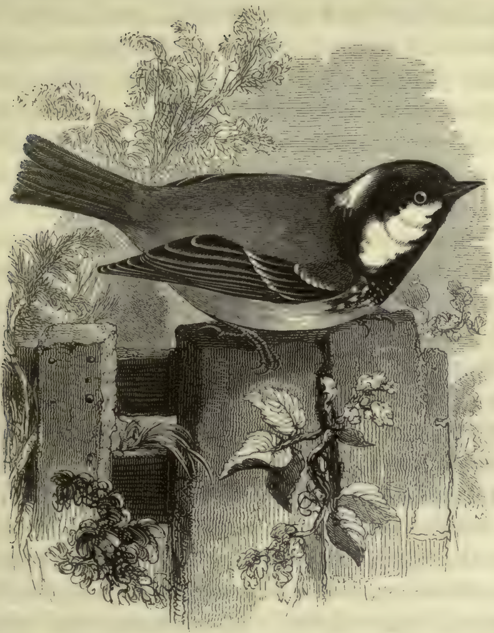
The male has the bill dusky, with horn-coloured edges: the irides dark hazel: the forehead and a line running backward over each eye, so as to completely encircle the head, white, the crown of the head blue, light in front and darker behind; a band of dusky blue runs from the nostril to the eye, and thence above each ear-covert to the nape, whence it descends, on either side of the neck, behind the cheeks, which are white; behind this band the nape is whitish; the mantle, rump and upper tail-coverts are yellowish-green; wings and tail blue; the greater wing-coverts and the tertials tipped with white; the chin and throat are of a bluish-black, which meets the dark band of the sides of the neck; the breast, belly and flanks, sulphur-yellow, with a mesial stripe of bluish-black on the first wing- and tail-feathers beneath, pearl-grey: legs, toes and claws, bluish-grey.

The whole length is four inches and a half. From the carpal joint to the end of the wing, two inches and three-eighths; the third and fourth primaries equal and longest.

In winter the dark patch on the throat is mottled with white. The female is less bright in colour than the male. The young are marked like the adults, but all their tints are more dingy, and their plumage is suffused with yellow.

By Kaup this bird, with the *Parus cyanus* of Eastern Europe and Siberia, has been removed to a genus *Cyanistes*, which, in the case of the former at least, is quite unnecessary.

The fondness for flesh and fat which, as mentioned above, the Bluecap shews is shared by other species of the genus *Parus*, and many persons who delight in watching the actions of these lively little birds attract them to spots where they can be conveniently observed by ministering to this taste. No mode of enticing them is better than that of hanging a lump of suet or tallow by a short string to the end of a flexible rod stuck aslant into the ground close to the window of a sitting-room. It is seldom long before a Titmouse of some kind finds the dainty, and once found visits are constantly made to it until every morsel is consumed. No other bird can succeed in keeping a foothold on the swinging lure, but the strong grasp of a Titmouse renders the feat easy for him.



PARUS ATER, Linnæus*.

THE COAL-TITMOUSE.

Parus ater.

THE COAL-TITMOUSE or Coal-Mouse, to use its earliest English name†, is almost as generally distributed in this country as either the Great or the Blue Titmouse, and inhabits woods, plantations and shrubberies, particularly such as contain firs. Like those birds also, this species stays with us the whole year round, though somewhat varying its haunts according to season, and is constantly in motion, roving in troops from tree to tree in eager search of food, often associated with the Golden-crested Wren and accompanied by the Treecreeper, while community of occupation sometimes brings it into contact with a flock of Redpolls. Insects form its chief food for the greater part of the year, and Macgillivray thought it lived entirely upon them ; but various berries and seeds are also eaten by it, some of them, it is said, being carried off and hidden for future use. Thompson found fragments of stone in its stomach, a fact pointing to what, on other evidence, is pretty well established, namely, that this bird is more vegetarian in its diet than either of the species of Titmouse already described. Though most generally engaged among the branches of trees, it often comes to the ground in search of the pupæ and larvæ which are concealed in the grass as well as the seeds, especially those of the fir, which have dropped from above. Macgillivray was informed by Mr. Hepburn that it delights in examining a ditch which has just been cleaned out, and that he had seen it pull small earth-worms to pieces and devour them.

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* Syst. Nat. Ed. 12, i. p. 341 (1766).

† So Merrett, in 1667 (Pinax Rerum Naturalium Britannicarum, p. 178), called this bird, latinizing its name *Carbonarius*. The French *Charbonnière*, applied to this as well as to the Great Titmouse, equally shews the meaning of the word which most later authors have spelt "Cole"; but as it has clearly nothing to do with *cole*, the plant (as found in *cole*wort and *cole*seed), and we have long given up spelling the name of the fuel we burn otherwise than "coal", it is wrong to keep "Cole" as the distinguishing prefix of this Titmouse. It may be urged that the Germans set us the example, writing *Kohl-Meise* and not *Kohle-Meise;* but here the *e* is doubtless dropped by way of abbreviation or euphony. It may also be remarked that the second syllable of the word "Tit-

The notes of this bird have a general resemblance to those of its congeners, and like them are subject to frequent repetition, but they are usually more shrill and can be at once distinguished by a practised ear. The observer last named says that he has heard it "compound a note, which is repeated for twenty minutes or so, and then seem to forget it", but the same has been and may be remarked of most species of Titmouse. The spring-notes of the cock are varied, and, though

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mouse"—a possible explanation of the first having been already (p. 333) given—has nothing to do with the quadruped so called, but it is cognate with the root of the French *Mésange*, the Anglo-Saxon *Mase*, the German and Danish *Meise*, the Swedish *Mes* and the Dutch *Mees* (pl. *Meezen*). It may therefore be doubtful whether the plural of "Titmouse" should be "Titmice" as custom has it, but the Editor has not the courage to use "Titmouses", though he believes he has heard East Anglians say "Titmousen", just as they always use the old form *housen* for *houses!*

not very musical, are yet to be deemed a song, ceasing as soon as the young are hatched. The nest is placed in the crevice of a wall, or more frequently in the hole of a rotten stump which the birds often excavate for themselves, generally choosing a place near, or even below, the surface of the ground, and Selby says he has found it in the entrance of a mole's or a mouse's burrow.* It is built of moss, mixed with wool and hair felted together—rabbits' fur being very commonly used, and feathers are said to be sometimes added. The eggs measure from ·62 to ·56 by from ·47 to ·44 in., and are from six to eight in number, white, spotted or speckled, but seldom blotched, with light red—the markings being somewhat larger than those on the eggs of the Blue Titmouse.

The Coal-Titmouse seems to be more common in England now than formerly. Both Montagu and Selby agree in saying that according to their experience it was less numerous than the Marsh-Titmouse, next to be described, whereas the contrary is certainly the case at the present day, and there is no evidence of the latter having grown scarcer in England. In Scotland, Sir William Jardine, writing in 1839, said that it had become the most abundant species of the tribe, or was seen, at least in winter, in greater profusion than any other, though ten or twelve years before it was by no means common. Its increase he ascribed, and no doubt truly, to the increase of plantations which were rapidly advancing to maturity. It breeds in every county of Great Britain as far as Sutherland, and in the autumn of 1862 was observed, apparently for the first time, in Caithness. It seems to be common in suitable localities throughout Ireland, but before tracing its range beyond the limits of the United Kingdom some remarks are necessary.

The thoroughness with which Messrs. Dresser and Sharpe have lately been investigating the ornithology of Europe has led them to detect a difference, easily seen when pointed out, but never before shewn to exist, between our Coal-Titmouse and the continental bird with which it had always been deemed identical, and to regard the former as distinct. This difference will presently be described, and the Editor does not wish to overlook its magnitude, but the value to be attached to it is quite another matter. Hereon each must judge for himself. In the Editor's eyes the difference does not amount to a specific distinction, as it does in those of his industrious friends, for he finds that examples of this bird, killed during the breeding-season in one of the oldest Scottish pine-forests, though more resembling English than foreign specimens, are yet intermediate between them—a fact which seems to shew that specific differentiation has not been entirely established. He, therefore, is compelled to refuse recognition to the *Parus britannicus* described by Messrs. Sharpe and Dresser (Ann. and Mag. Nat. Hist. Ser. 4, viii. p. 437), and since figured in their beautiful work (parts xi. and xii.), while congratulating them on their acumen in having indicated what one school of naturalists would certainly call an "incipient species"; and in forming this resolve he has been largely helped by the kindness of those gentlemen, which has enabled him to study and compare the typical specimens with a considerable series of others, containing also three examples from the collection of Mr. J. H. Gurney, junior, which, though obtained in Norfolk, do not differ from continental specimens, and may be of foreign parentage, thus shewing that the true *P. ater*, in the eyes of those who would separate *P. britannicus* from it, has occurred in England, and is possibly an occasional straggler to this country.

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* Mr. Bond once found a nest on the branch of a fir, close to the bole, very like that of a Longtailed Titmouse, but much rounder (Zool. p. 7444).

On the supposition that our Coal-Titmouse is distinct from the true *P. ater*, there is as yet no evidence of the former occurring elsewhere than in the British Islands, but if we regard it merely as a local race then the species will be found to be very widely spread. In Norway, it is said by Herr Nordvi to have been observed on two occasions at Vadsö in East Finmark, but according to Herr Collett it does not ordinarily range beyond Nordland. In Sweden and Finland its limits lie between lat. 63° and lat. 65° N., and it has been shot at Archangel. Thence it probably extends across the Russian Empire to Lake Baikal and Dauuria; for Messrs. Sharpe and Dresser were informed by Dr. Tackzanowski that birds from that country agree precisely with European specimens. Dr. von Schrenck says the same of examples from Amoorland, and Dr. von Middendorff met with it on the shores of the Sea of Ochotsk; but the *Parus pekinensis*, lately described by Père David (Ibis, 1870, p. 154), which seems to differ from *P. ater* only in having the feathers of the crown lengthened,* may have been the bird obtained by the Russian travellers. The southern limits of *P. ater* in Asia cannot yet be given, but it does not seem to reach the Himalayas, its place in part at least of those mountains being taken by the allied *P. atkinsoni*, if that be not the young of some other species. Canon Tristram found it abundant in the cedar-groves of the Lebanon, and it is said to be common in the Caucasus, though in southern Russia and the Crimea it occurs but rarely. Mr. Robson has met with it at Constantinople, but it has not been included among the birds of Greece, though Lord Lilford says it is occasionally seen in Corfu in winter. It is not common in Italy, but passes the summer in the mountains and descends to the plains in autumn. It is also found in Sicily, where it is said by Sig. Benoit to breed in Kites' nests, and it inhabits Spain and Portugal. Throughout the rest of Europe it is a very well-known bird. In Algeria its place is taken by *P. ledouxi*.

The adult male has the bill black: the irides hazel: the top of the head, and the upper part of the ear-coverts, glossy black, which divides on the back of the head into two broad bands running down to the scapulars, and leaving between them a conspicuous white nape; the cheeks and sides of the neck, white; mantle olive-grey, with, in some examples, a bluish tinge on the upper part, the olive always prevailing lower down and passing into brownish fawn-colour on the rump*; upper tail-coverts greenish fawn-colour; the upper wing-coverts broadly tipped with dull white, forming two conspicuous lines of spots across the wings; quills blackish-grey, edged with greenish-grey; the tertials tipped with dull white; the chin and throat, black, which extends upwards towards the sides of the neck, but not so far as to meet the black bands before mentioned; breast dull white, passing into pale fawn-colour on the belly, flanks and lower tail-coverts; quills beneath, shining grey; those of the wings edged inwardly with white near the base: legs, toes and claws, dark leaden-grey.

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* This character is to some extent shared by Japanese specimens, formerly, and still by Dr. Finsch, referred to *P. ater*.

The whole length is four inches and a quarter. From the carpal joint to the tip of the wing two inches and three-eighths; the third and fifth primaries equal in length, and shorter than the fourth which is the longest in the wing.

Females are more dull in colour; the young have no gloss on the head, the white is perceptibly tinged with dusky-yellow, especially on the cheeks, and the greenish edges of the quills are more conspicuous.

In continental examples of *P. ater* the mantle is of a clear bluish-grey, the lower part of the back is tinged with green, and the upper tail-coverts alone are fawn-colour; the edges of the quills also have a perceptibly bluish tinge.

This bird is at once distinguished from the Marsh-Titmouse by the white patch on the nape and by the white spots on the wing-coverts, which are always present, neither being found in the Marsh-Titmouse at any age. Both these species have been needlessly removed by Kaup to a genus *Pœcile*.

The vignette represents the sternum of the Great Titmouse.

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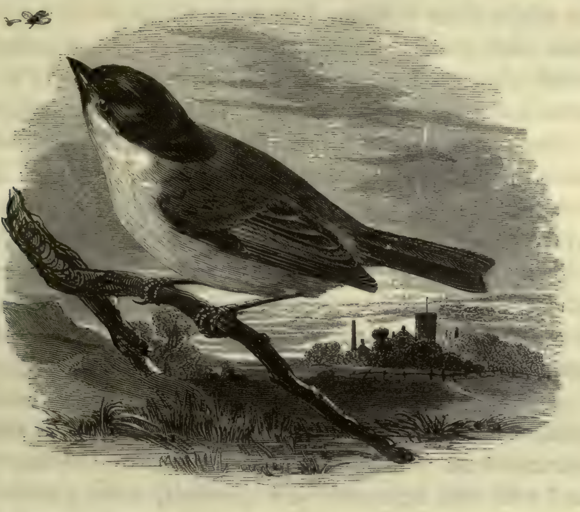
* Macgillivray says that when the plumage is new all the feathers of the back are tinged at the tip with brownish-yellow, but when worn that part is bluish-grey. In winter also the black feathers of the throat are tipped with white.



Parus palustris, Linnæus*.

THE MARSH-TITMOUSE.

Parus palustris.

The Marsh-Titmouse, if not so generally distributed as some others of the genus, is yet plentiful as a species in many localities, and, as its name implies, is more partial than the rest to low tracts of land bearing willows and alders, and to swampy ground near woods; but it is by no means confined to such situations, and often visits orchards and gardens, though it does not much affect high trees, generally preferring coppice and brushwood. Like its congeners, it remains in this country throughout the year, and otherwise resembles them in its active and sprightly habits, flitting from place to place, feeding on insects in their different stages, and towards autumn and in winter on the seeds and berries of various plants, though the quest of insects always forms its chief occupation. In the pursuit of its prey Mr. Alston has observed it, he says (Zool. p. 6891), thrust its bill under the scales of the rough bark of a Scotch fir, and prise them off with a jerk which sends them to some distance.

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* Syst. Nat. Ed. 12, i. p. 341 (1766).

This bird makes its nest in holes in old willows, and especially chooses those which, growing by the sides of streams and rivers, are every few years polled: but other suitable trees and rotten stumps are also used, and it has been known to breed in a rat's hole in the ground. Montagu says he has seen it artfully excavating the decayed part of a willow, and carrying the chips in its bill to some distance, always working downwards, and making the bottom larger than the entrance. The nest is generally placed on a bed of chips or fragments of rotten wood, and consists of moss mixed with willow-down and sometimes a little wool, felted together with hair, especially rabbits' fur, the whole being often lined with soft willow-down. The eggs are from five to eight in number, measuring from ·65 to ·57 by from ·49 to ·46 in., white, spotted with dull light-red, and generally have a more dingy look than those of the other species. The call-note of the Marsh-Titmouse is harsh and easily to be distinguished from that of its congeners, sounding like the syllables "peh" "peh" hoarsely pronounced, but the spring-notes of the cock are varied, gay, and more musical.

From Cornwall in the south-west, the Marsh-Titmouse may be traced throughout all the counties of England and the greater part of Wales; but its distribution is certainly local, and not entirely determined by the presence or absence of marshy ground, for in Lincolnshire it is not of common occurrence, though of late years, according to Mr. Cordeaux, oftener met with than formerly. Some ornithologists think that where this species is abundant the preceding is rare, and so conversely. This opinion, considering the difference of their haunts, is very likely true, but it may be remarked that in some localities each is to be found in about equal numbers, neither being very common. In Scotland its distribution is very partial, but it would seem to occur throughout the eastern Lowlands, Lanarkshire and Renfrewshire. It also inhabits the counties of Stirling, Fife, Perth, Aberdeen and Inverness, in most of which it has only been recently remarked, and Mr. Harvie Brown thinks that it is rapidly pushing its range northwards. Sir W. Jardine, in 1839, noticed its decrease in Dumfriesshire, where it is now considered only an occasional winter-visitant, its place being taken by the Coal-Titmouse, which, as already mentioned, has there largely increased. In Ireland, Thompson met with it only near Belfast, but a specimen has been shot near Dublin, and Mr. Ball has seen it in the county Kildare.

The continental range of the Marsh-Titmouse is not very easily defined, owing to the existence of a bird to which most authorities have assigned the rank of a species, though on grounds which seem to the Editor very slight. Yet as most of those who have had the opportunity of observing this bird—the *Parus borealis* of Baron de Selys-Longchamps—in life, declare that it differs in habit from *P. palustris*, the specific distinctness of the two may perhaps here be recognized, but their very close resemblance in appearance must be admitted by all, and it may further be remarked in connection herewith, that British examples of the Marsh-Titmouse differ somewhat in coloration from continental specimens, though not to the same extent as has already been mentioned in the case of the Coal-Titmouse. With regard to these birds Messrs. Sharpe and Dresser have taken even more than their usual pains when discriminating nearly-allied forms, and if the results at which they have arrived are not entirely convincing, the fact cannot be ascribed to the want of care and labour or to the fewness of the specimens they have compared. In their work, these gentlemen consider that *P. palustris* has been shewn to exist in Norway and Sweden up to lat. 61° N., and that it also inhabits Denmark, Germany, Turkey, Greece, Italy, Switzerland, France, Belgium and Holland. In the north of Europe it is replaced by *P. borealis*, which also appears in the Alps, where it was at one time regarded as distinct, and called *P. alpestris* by M. Bailly. In the south-east of Europe there occurs another bird, the *P. lugubris* of Johann Natterer, which seems to be an extreme form of

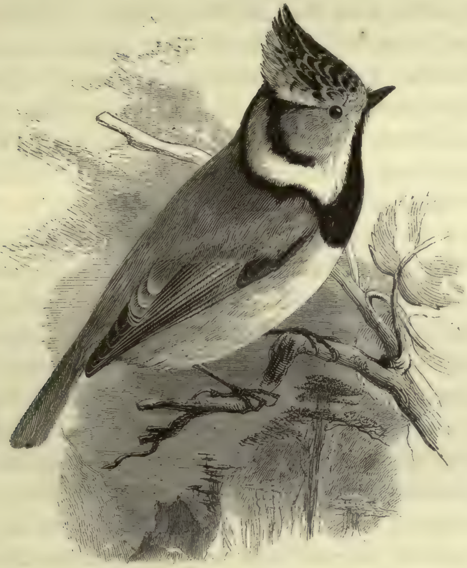
P. borealis, and has been very generally acknowledged as a distinct species, though by some the *P. alpestris* just mentioned has been confounded with it. Still further to the eastward other allies of *P. borealis*, to which the names of *P. baicalensis* and *P. kamchatkensis* have been given, are said to be found. In North America this group of birds is represented by *P. atricapillus* with its local forms, *P. septentrionalis*, *P. carolinensis* and *P. occidentalis*—all originally described as distinct species, but now reduced to the rank of varieties by Dr. Coues.

The bill is black: the irides dark hazel: the forehead, crown and nape black, slightly glossed with bluish-green; the cheeks and sides of the neck dull white, the latter tinged with buff; the back and wing-coverts hair-brown; the rump and upper tail-coverts nearly the same, but lighter and inclining to dull buff; quills blackish-brown, those of the wing edged with hair-brown; the chin black; the throat and breast, dull white; belly, flanks and lower tail-coverts, tinged with dull buff; quills beneath, shining grey: legs, toes and claws, bluish-black.

The whole length is four inches and a half. From the carpal joint to the end of the wing two inches and three-eighths: the third primary shorter than the fourth, which is equal to the fifth, and these two are the longest in the wing.

The sexes do not differ in plumage: the young resemble the adults, but have the colours less bright.

By many authors the *Paridæ* are thought to bear affinity to the Crows, and some members of both groups certainly have in common the habit of grasping their prey with one foot while picking it. It may be safely said that birds more useful to the gardener and the planter than the four species of Titmouse now described do not exist in Britain. The worst that can be proved against them is that they occasionally help themselves to hazel-nuts and walnuts, and that sometimes a bird acquires the trick of taking bees from their hives. This last must be regarded as an individual peculiarity, and when observed should, in the interest of the whole race, be speedily stopped by the destruction of the malefactor.



Parus cristatus, Linnæus*.

THE CRESTED TITMOUSE.

Parus cristatus.

The Crested Titmouse is as local in Britain as the species already described are common. It was first included as a British Bird by Walcott, who, in 1789, said, "This bird has been lately observed in *Scotland*, once in a considerable flock." In 1802 Montagu stated that it was "not uncommon amongst the large tracts of pines in the north of Scotland, particularly in the forest of Glenmoor†, the property of the Duke of Gordon, from whence we have seen it." In the same year Latham (Gen. Syn. Suppl. ii. p. 255) confirmed the fact of the species being plentiful in some parts of Scotland, especially in the pine-forests, whence, he added, he had received a specimen, then in his possession. Selby, in 1833, said that he had looked for it in vain, but that he had been told by Sir William Jardine of its breeding not far from Glasgow, and Sir William, who had been equally unsuccessful in meeting with it in his own country, mentioned in 1839 (B. Gr. Br. and Irel. ii. p. 177) that this information was supplied by Lieut. Chauner. Mr. Thomas Macpherson Grant, in some notes on birds in the eastern counties of Scotland with which he favoured this work, says that he had seen the species in considerable numbers and possessed a specimen, shot by himself, most likely, from what Macgillivray tells us, in Strathspey; while Mr. Bigge forwarded the information that in the summer of 1837 he observed several examples in the pass of Killicrankie.

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* Syst. Nat. Ed. 12, i. p. 340 (1766).

† Mr. Gray informs the Editor that the very old timber, consisting chiefly of Scotch firs and oaks, in this forest, the name of which is more correctly spelt Glenmore, was cut down towards the end of the last century.

From later inquirers, who have profited by the experience of their predecessors, we now know that this bird is a permanent resident in a few of the oldest forests of Scotland which have not lost their natural growth of firs and oaks, but as such it is restricted to very narrow limits—certain valleys in the counties of Ross, Inverness, Perth, Elgin, Banff and, perhaps, Aberdeen—for Mr. Gray has been unable to trace it in Lanarkshire during the last twenty years. This being the case it runs great risk of extermination, and whoever is anxious that this interesting species should still remain a member of our Fauna, will doubtless readily excuse the naming of the localities it frequents, since every publication of such details is fraught with danger to its existence. Milner in 1847 saw eggs, taken that season in Strathspey (Zool. p. 2017), which were probably the first known to have been found in Britain. In 1848 Wolley procured other specimens from the same quarter, and in the autumn of the same year Mr. Gould exhibited, at a meeting of the Zoological Society, birds obtained in Scotland, and their appearance in the flesh seems to have surprised some naturalists who had perhaps not appreciated the statements of older authors. In one remnant of what was of yore a vast forest of Scotch firs, Wolley, in the spring of 1850, found it pretty common, associating with the Coal-Titmouse, the Long-tailed Titmouse, and the Golden-crested Wren; but nearly all the birds he observed were cocks, the hens being no doubt on their nests, which for want of time he was not able to discover. The following year nests were sent to him from this place: they are built of moss and wool, felted with a little fur of the mountain-hare. Mr. Hancock informed Mr. Hewitson that some nests he found in 1850, were placed "in holes of old stumps of trees from three to six feet above the ground," and were composed of "rabbits' or hares' down, a little moss, and a few feathers." Mr. Charles Thurnall, in a communication to the work of Messrs. Sharpe and Dresser, says that in a neighbouring locality he had frequent opportunities of seeing the Crested Titmouse, the habits of which were exactly the same as those of the Bluecap, except that it was not quite so active in its movements. The birds were generally in family-parties in the topmost boughs of the firs, but they frequently came to the ground, apparently to pick up a seed that had dropped from the cones, and flew up again immediately. For their nest "they prefer the rotten stem of a fir, about twelve or fourteen feet high (there are scores of such stumps standing in the wood, the wind having broken the trees off at that height), and bore a hole in the tree from two feet to eight feet above the ground." He adds that he had also found nests in old stumps of very large trees within six inches of the ground, their mode of nidification being thus very like that of the Coal-Titmouse. In Germany, however, the Crested Titmouse has been known to occupy the forsaken nests of Crows and Squirrels, and even, according to the statement of Herr Pässler and information furnished by Herr Carl Sachse to Messrs. Sharpe and Dresser, occasionally to build a nest for itself, placed in a bush and having a hole in its side, like that of the Common Wren. In Scotland it breeds at the end of April or early in May, and the eggs do not seem to exceed five in number, though on the continent eight or ten are said to be laid. These are white, blotched, spotted and speckled with light red, the markings being bigger and more collected at the larger end than in the eggs of most of its congeners. They measure from ·67 to ·58 by from ·51 to ·48 in.

In some seasons, according to Mr. Gray, this Titmouse is more plentiful than in others, but his conjecture that the increase arises from the arrival of migratory flights from abroad is unsupported by evidence, and the fact is more likely due to causes affecting the supply of food to the home-bred birds. That the Crested Titmouse does occasionally in winter wander from its usual haunts is, however, shown by its occurrence in Argyleshire, in January, 1838, mentioned by Macgillivray, and near Dumbarton, as communicated, by Dr. Smith in 1857, to the Royal Physical Society of Edinburgh. Dr. Saxby saw two in Perthshire early in April, 1858, and he also reports (Zool. p. 7998) his having observed a small flock at Craig Lockhart near Edinburgh, February 25th, 1862, whose actions he agreeably describes. It is said to have strayed even to England and Ireland, and eight instances of its supposed occurrence in the former are enumerated by Mr. Harting in his useful 'Handbook,' to which a ninth, since recorded by Mr. M. Simpson (Zool. s.s. p. 3021) has to be added; while Mr. Blake-Knox informed Messrs. Sharpe and Dresser of some three or more captures in Ireland. Many of these cases, on enquiry, cannot be substantiated.

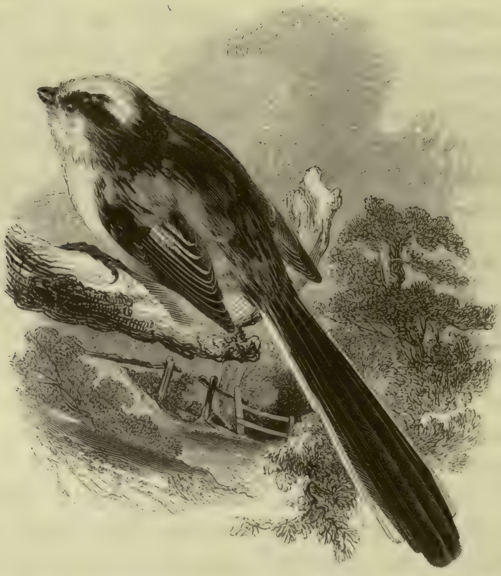
The Crested Titmouse inhabits Norway, Sweden, Finland and Russia to about lat. 64° N., but does not appear to be found beyond the Ural, though it is recorded from the Caucasus. Near Odessa it occurs only on passage and but rarely. There is no report of its being met with in Turkey, but it is common in Hungary and thence, through the Austrian dominions, to the north of Italy, in the mountains of which it breeds, but, according to Dr. Salvadori's recent work on the birds of that country, its range there is by no means so wide as several authors have alleged. In Spain it occurs even near Gibraltar, and sometimes in Portugal. It is not rare in France or Germany, but in each as well as in Belgium and Holland it is very local. In nearly all these countries, and in those which lie between them, it is very partially distributed, usually abiding in forests, feeding on the fir-frequenting insects, or, in default of them, on the seeds of the firs. But this is not always the case, since Sir W. Jardine once saw it in November in the apple-orchards near Havre-de-Grace, and Hoy furnished this work with the information that, according to his experience, it seems partial to woods where firs and oaks are mixed, the holes in the oaks generally serving it for its nests. This same observer added that its note has some resemblance to that of the Coal-Titmouse, but a peculiar shake at the finish makes it distinguishable; its simple call-note is also somewhat different.

The adult male has the bill nearly black: the irides hazel: head dull black; each feather tipped with greyish-white, those on the forehead rounded, those behind much elongated, pointed and slightly recurved, forming a conspicuous crest; a black line runs from the bill to the eye, and thence above the ear-coverts to the back of the head, whence it descends behind the cheeks, which are white mottled with black. To this succeeds a white band on each side, followed by a second black crescentic line; the back, wings and tail-coverts, hair-brown; quills rather darker; chin and throat, black, meeting the second black line on the side of the neck; breast, belly and flanks, dirty white, tinged with dull buff on the sides; lower tail-coverts dull buff; quills beneath, shining grey: legs, toes and claws, lead-colour.

The whole length is four inches and a half. From the carpal joint to the tip of the wing, two inches and a half: the third and fifth primaries equal and a little shorter than the fourth which is the longest feather in the wing.

The female has less black on the chin and throat than the male, and a somewhat shorter crest. The young are said to resemble the adults, but have the crest shorter.

Kaup proposed generic distinction, under the name of *Lophophanes*, for this species and the North-American *Parus bicolor*. In the case of the former such separation is not warranted by any known structural peculiarity; whether it is required in the case of the latter need not here concern us.



ACREDULA CAUDATA (Linnæus*).

THE LONG-TAILED TITMOUSE.

Parus caudatus.

ACREDULA, *K. L. Koch* †.—Bill very short, strong, much compressed, both mandibles curved, the upper considerably longer than the lower. Nostrils basal, round, concealed by the plumage. Eyelids broad and crenate. Wings with ten primaries, the first short, the second shorter than the ninth, the third shorter than the seventh, the fourth and sixth nearly equal, but shorter than the fifth, which is the longest in the wing. Tail very long, narrow and graduated, the outer feathers being only about one-third of the length of the middle pair. Legs with the tarsus long and scutellated; feet moderate, the anterior toes united to the second joint, the outer toe longer than the inner, the hind toe stout and armed with a long, hooked claw.

THE LONG-TAILED TITMOUSE was removed from the genus *Parus* in 1816 by Koch, who carefully pointed out its many distinctive features, and shewed some of them plainly by means of figures. In the same year Leach (Syst. Cat. Mamm. and Birds, p. 17) also separated this bird from *Parus* and called it *Mecistura vagans*. As it is now perhaps impossible to determine which of these authors anticipated the other, the two names *Acredula* and *Mecistura* must be regarded as of the same date, and if so there can be no doubt as to the propriety of preferring that given by Koch, since it was accompanied by a precise definition of the generic characters, while Leach contented himself with a change of name only*. That the separation of the Long-tailed Titmouse from the genus *Parus* is justifiable few authorities nowadays doubt, and its convenience is shewn by the number of species or allied forms which have been of late described.

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* *Parus caudatus*, Linnæus, Syst. Nat. Ed. 12, i. p. 342 (1766).

† Säugthiere und Vögel Baierns, p. 199 (1816).

The Long-tailed Titmouse is a well-known if not a very common species, to be generally seen in woods, plantations, orchards and tall hedges. It remains in this country during the whole year, usually keeping in smaller or larger companies, often associating with the Golden-crested Wren and the Coal-Titmouse, and is active and lively in its motions, being almost incessantly in progress, each bird of the band successively threading its way from branch to branch in single file, or streaming over the spectator's head from tree to tree or hedge to hedge in continuous procession while in search of food, which seems in this species to be confined entirely to insects, their larvæ and eggs. Its nest is a marvel of construction, combining beauty with safety and warmth. In shape it is nearly oval, with a small hole in the upper part of the side, by which the bird, hence known in many districts as the Bottle-Titmouse, enters†. The outside is studded with silver-coloured lichens adhering to a firm texture of moss, wool and spiders' nests, and the inside is profusely lined with soft feathers—one described by Macgillivray was found to contain 2,379 feathers, chiefly those of the Pheasant, Wood-Pigeon, Rook and Partridge. The nest is often placed in the middle of a thick bush, and so firmly fixed, that, to preserve its natural form and appearance, when taken, the portion of the bush containing it must be cut out. It is, however, frequently built in more exposed situations, and sometimes even high up in the fork of a tree, but in such cases the lichens which beset it, being of the same colour as those which grow on the trunk or arms, render it almost invisible except to the trained eye. Mr. Weir watched a pair of this species lay the foundation of their nest, which took twelve days to build, cock and hen working alternately at it, but usually the nest is longer under construction. The eggs do not commonly exceed seven or eight in number, but there is good evidence for as many as sixteen having been found in one nest*. They are white, generally with some pale reddish dots, specks or streaks, but are frequently quite plain, or again slightly suffused with a lighter shade of reddish: they measure from ·56 to ·5 by from ·44 to ·41 in. While the hen is sitting her long tail is cocked forward over her back and projects through the hole in the nest above her bill: at night her mate becomes her bedfellow. The young after they leave the nest keep company with their parents during the first autumn and winter, and the whole family

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* Already in 1752 Mœhring (Avium Genera, p. 45) had made this species the type of a genus distinct from *Parus*, calling it *Orites* and defining its characters; but those who try to follow the rules of zoological nomenclature adopted by the British Association (the only code ever set forth by any public authority) are precluded from accepting the genera of that writer, and most fortunately, considering the additional amount of confusion they would cause.

† Selby says there are two holes, but this is certainly not so except in extremely

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rare cases, and even when a second hole has been found it may perhaps be caused by the nest having been built, as it often is, so as to enclose in its substance a twig diverging from one of the branches which support the fabric. Such a nest unless most carefully taken from its site would be sure to present the appearance of having a second hole.

[*] A writer in the 'Zoologist' (p. 2567) suggests that when a large number of eggs of this species have been found in one nest they have been laid by more than one bird, adding that he has "known several instances when a considerable number of birds have had one nest in common." The Editor is not aware of any evidence corroborating this curious assertion, and would not here mention it but that Mr. Hewitson in the last edition of his work seems to give it the sanction of his high authority.

generally cling to one another on the same branch at roost, looking, when thus massed together, like a shapeless lump of feathers or a bundle of dead leaves. The notes of this species are very different from those of any of the genus *Parus*, being weak and only to be heard at a short distance. Their sound, however, suffices to assemble and keep together the flock, and in spring the cock has a pleasing though feeble and short song.

The Long-tailed Titmouse breeds regularly in all the counties of Great Britain, though in some it is rather a local species, and occasionally it seems to disappear from a district for a year or two. It is also pretty common in some of the Inner Hebrides and it has occurred in Shetland, though as might be expected of such a tree-haunting bird it is extremely rare there. In Ireland, according to Thompson (B. Irel. Pref. p. xix.), it has, like the Mistletoe-Thrush, of late years gradually become more plentiful: the extension of plantations being accessory to this end in respect of both species. Still it would seem to have been observed in some thirteen counties only, and in none to the south-west of Galway and Tipperary, though, as he remarks, it may not improbably be found in every county throughout the island possessing abundance of wood.

Whether our Long-tailed Titmouse is to be regarded as inhabiting any part of the continent depends chiefly, as with several other birds, on the value assigned to certain differences which have, in this case, been long known to exist, and are commonly observable between British and foreign specimens. These differences the Editor was at one time inclined to consider specific so far as regards the British form and that found in the north and centre of Europe. Usually there can be little or no doubt in deciding whether an adult example is a native of Britain or of Scandinavia or Germany, for the Long-tailed Titmouse of the countries last-mentioned has, when fully mature, the whole of the head white, without any trace of the dark stripes which, as may be seen from the figure, and as will be presently described, characterize the British form. But in various parts of our island examples have been observed which do not possess these stripes*. Such examples certainly may have been visitors from abroad; but it would seem as though in Scandinavia the amount of white in the plumage generally varies somewhat according to the latitude at which the bird lives, and that specimens from its extreme northern limits are perceptibly whiter than those bred further south. Accordingly, if this be the case in examples from one continuous tract, it would appear only reasonable that still greater variation should be observed in examples from a country which has been cut off from that tract so long as Britain has been separated from the continent. Should, therefore, further research shew that in northern examples of the Scandinavian Long-tailed Titmouse the white of the head encroaches more on the nape or even the mantle, and that of the scapulars and flight-feathers is more extensive than in southern examples, it would be pretty clear that the greater or less proportion of white which any bird of this genus possesses is hardly to be taken as a specific character, even when it is reduced to the small limits presented in ordinary British examples. Again, the Long-tailed Titmouse of Spain has lately been described as a distinct species, and no one looking only at the type-specimen, which has been kindly entrusted to the Editor by Mr. Dresser, would hesitate to declare that its separation was justifiable; but that gentleman and Mr. Sharpe in their excellent work state that it is difficult to tell whether some Piedmontese examples are identical with the British or the Spanish form. Thus the matter must be left to the consideration of ornithologists. Those who, like the authorities just named, would recognize as valid four European species of the genus *Acredula*, should call the British bird *A. vagans* (this specific name of Leach's taking precedence of Mr. Blyth's *rosea*); the white-headed bird of northern and central Europe and northern Asia, but sometimes possibly straying to England, *A. caudata;* the small grey-backed bird of south-western and southern Europe *A. irbii;* and the larger grey-backed bird of Turkey *A. tephronota*—this last being to all appearance a very good species. Besides these there belong to this group, *A. pœltzami*, made known in the present year by Dr. Severzov in his work on the ornithology of Turkestan, *A. vinacea* and *A. fuliginosa* from Thibet, *A. glaucogularis* and *A. ouratensis* of China (with the former of which *A. swinhoii* from the same country may be identical), and *A. trivirgata* of Japan, much resembling and formerly identified with our British form.

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* Mr. Blyth (Mag. Nat. Hist. ser. 2, i. p. 203) mentions one "in which the black markings on the head were nearly obsolete." Mr. Hancock's collection contains an example killed in Northumberland with a pure white head, and there is a similar specimen in the Museum of Newcastle-on-Tyne, supposed to have been obtained in that neighbourhood. Mr. Gatcombe also records (Zool. s.s. p. 2943) his having observed in a flock near Bridgwater in October, 1871, an example with a white head.

The bill is black: the irides hazel: the eyelids bright orange-red*: the front and crown of the head, the cheeks and ear-coverts are white, the last being streaked with black; a dull black stripe, variable in width, and sometimes entirely wanting, takes its rise on either side on the lore, and, passing backward over the eye, surrounds the head, spreading out on the nape and upper part of the back into a triangular black patch; the scapulars and lower part of the back are of a dull rose-red; primaries and their coverts black; the secondaries and tertials dull black, broadly edged with white, their coverts being edged with dull rose-red and tipped with white; upper tail-coverts black; the three middle pairs of tail-feathers black; the next pair black on the basal and greater part of the inner web, with a small triangular black spot at the tip, but the rest of the feather white; the two outer pairs with still less of black, and on the inner web only, the rest being white; the chin, throat, lower wing-coverts and sides of the neck white, the last mottled with black streaks and tinged with dull red; the breast dull white with a few black streaks; belly greyish-white, tinged on the sides with dull red, which becomes deeper on the flanks and passes, on the vent and lower tail-coverts, to dull chestnut-brown: legs, toes and claws, dark brownish-black.

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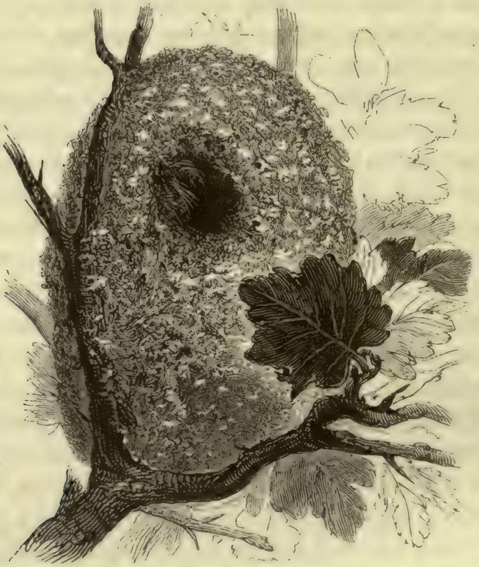
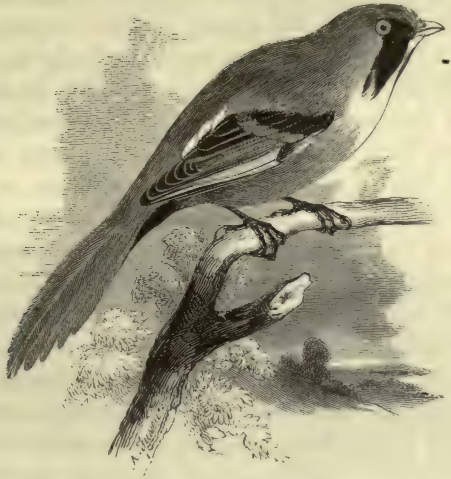
* According to Messrs. Alston and Harvie Brown Scandinavian birds have the eyelids yellow, but the colour of these parts seems to vary with age.

The whole length from the bill to the end of the tail is about five inches and a half, but the body is smaller than that of any British bird except the species of *Regulus*. From the carpal joint to the end of the wing two inches and one quarter.

Females differ but little from males except in having more black about the head. The young have the irides of a straw-colour; the top of the head very white; but the ear-coverts and sides of the neck are dull black, and the scapulars greyish-white; all the feathers, save those of the tail, which in the adult are pure black, are in the young sooty-black, and there is no trace of any red tinge except on the vent and lower tail-coverts, which are nearly as bright as in the adult.

The vignette below represents the nest of this bird.





PANURUS BIARMICUS (Linnæus*).

THE BEARDED TITMOUSE.

Calamophilus biarmicus.

PANURUS, *K. L. Koch* †.—Bill short, subconical, upper mandible convex above, decurved from the base, broader and considerably longer than the lower, which is almost straight: the edges of both somewhat inflected and not notched. Nostrils basal, oviform, pointed in front and partly covered by reflected bristly feathers. Wings with ten primaries, the first almost abortive, the third longest, but the fourth and fifth nearly equal to it, the second shorter than the sixth and about equal to the seventh. Tail very long, graduated and cuneiform, of twelve weak feathers rounded at the tip and slightly decurved. Legs with the tarsus long and scutellated in front; feet stout, the anterior toes almost free, the outer toe perceptibly shorter than the inner; claws rather long and stout, not much hooked.

THE beautiful bird here figured was also simultaneously separated from the genus *Parus* by Koch and Leach, and the careful generic diagnosis given by the former entitles the name *Panurus* bestowed upon it by him to preference over that of *Calamophilus* applied by the latter, who left

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[*] *Parus biarmicus*, Linnæus, Syst. Nat. Ed. 12, i. p. 342 (1766).

[†] Säugthiere und Vögel Baierns, p. 201 (1816).

its characters undefined. The position of this bird has for some years been a moot point in ornithology, and though the best authorities are still greatly divided thereon, most of them agree in holding it to have no near affinity to the genus *Parus* and its allies, not even enough to justify its being kept in the family *Paridæ*. Its habits and structure alike shew its divergence from any member of that group, while the difference of opinion existing among systematic writers, to be presently mentioned, proves the difficulty of referring it with certainty to any other family which has been established. *Panurus* seems to be a perfectly distinct form, with no very near relations, and under these circumstances and after long consideration the Editor thinks that it must be regarded as the representative of a separate family to which he would apply the name *Panuridæ**. At the same time he leaves the bird in the same place as it has hitherto occupied in this work, not because he is satisfied therewith, but because he cannot suggest a position for it in which he has any great confidence, and he is averse to any change without feeling assured of its expediency.

This species, the only one of the genus†, was first discovered by Sir Thomas Browne of Norwich, who sent a picture of it to Ray as mentioned by him, in a small book published some two hundred years ago, as follows:—"A little Bird of a tawney colour on the back, and a blew head, yellow bill, black legs, shot in an Osiar yard, called by Sr. *Tho.* for distinction sake *silerella*"‡. Ray seems however to have had no further information about it, and in his

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* M. des Murs, in 1860, recognized such a family which he called *Panurinæ* (Ool. Orn., p. 508.)

† Bonaparte thought he had recognized a second species which he called *Calamophilus sibiricus* (Comptes Rendus, 1856, p. 414), but Drs. Baldamus and Blasius having examined the type-specimens in Major Kirchhoff's collection say (Naumann's Deutschl. Vög. xiii. Nachtr. p. 156) that it was founded on the young of the common European species.

‡ 'A Collection of English Words Not Generally used, &c. With Catalogues of English Birds and Fishes: &c. By John Ray.' (London: 1674.) Attention was first called to this passage, which occurs in the unpaged preface or notice "To the Reader", by Mr. J. H. Gurney, junior. There cannot be a doubt of its reference to this species.

'Synopsis Avium' edited in 1713, after his death, by Derham, the bird is doubtfully referred (p. 81) to the Sedge-Warbler, thus:—"*Salicaria* Gesn. *An* Silerella *D. Brown?*" In 1738, or perhaps a few years earlier, Albin figured the species (Nat. Hist. Br. B. i. p. 46, pl. 48) as "The Beard Manica from Juteland, or bearded Titmouse", but stated that he had been informed by Sir Robert Abdy that it was found in the salt-marshes in Essex, and by others that it likewise occurred in the fens of Lincolnshire. In 1745, Edwards also figured both sexes (Nat. Hist. B. ii. pl. 55), by the name of "The least Butcher-Bird", saying that the then Lady Albemarle had, in 1743, "brought with her from Copenhagen a large cage full of these birds"; but that he had seen others, both cocks and hens, shot among the reeds in marshes near London. The bird thus figured, Linnæus, apparently without having seen a specimen, named *Parus biarmicus**, and, in 1769, Scopoli described the species, calling it *Parus barbatus.* In 1774, S. G. Gmelin, who had found it on the Sea of Azov and the Caspian, described it as *Parus russicus* (Reise durch Russland, ii. p. 164, pl. x.), while, as already stated, Koch and Leach, in 1816, removed it from that genus. Not however until 1833 did any naturalist doubt its having been rightly associated with the *Paridæ;* but in that year Mr. Blyth, in the first ornithological paper which proceeded from his subsequently prolific pen, challenged the common belief and shewed (Field Nat. i. pp. 66–70), from his careful observation of its habits in captivity and from its internal structure, that it was no Titmouse, expressing also his belief that it was more nearly allied to the Shrikes (*Laniidæ*) than to any other group. This opinion being immediately questioned, he in some measure qualified it (*tom. cit.* p. 190), observing that the bird differed from the Shrikes in the formation of its digestive organs and in its mode of progression on the ground. Some years after in a translation of Cuvier's 'Règne Animal', published in 1840, he pointed out (p. 198) that its anatomy was strictly that of a Finch, and that it was much more nearly related to the Waxbills (*Estrelda*) than to the *Paridæ*, while in 1852 (Cat. Mus. As. Soc. p. 134) he placed it at the end of the *Fringillidæ* under the heading "*Incertæ Sedis*." In 1840, Macgillivray, apparently unaware of Mr. Blyth's prior observation of this bird's internal structure, announced that, having a dilatation of the œsophagus towards the right side, like that possessed by the Buntings and Finches, it ought to be referred to the neighbourhood of those birds, and that, though distantly related to the Reed-Bunting, its affinities were to the species of the American genus *Ammodromus*. In 1860, Mr. Tomes, from an examination of its osteology, came to much the same conclusion—both he and Macgillivray conclusively shewing that its former association with the *Paridæ* was most unnatural. In 1863, Jerdon (B. Ind. ii. p. 283) thought that it had relations to the group known as *Timeliidæ**, near *Pyctorhis*, while, in 1871, Messrs. Sharpe and Dresser recorded their belief "that it is more closely allied to certain *Drymœcine* forms, especially the genus *Sphenœacus*"; and the latest authority, Prof. Sundevall, in the present year 1873, takes Mr. Blyth's view, placing (Meth. Nat. Av. dispon. Tent. p. 30) *Panurus* in the family "Viduinæ", containing, among many other forms, the well-known Whydah-birds and Waxbills or Bengalees. The Editor is informed by Mr. Bartlett that he considers *Panurus* allied to *Liothrix*, from the similarity of their nests and eggs; while Mr. Parker, from a recent examination of the cranial and palatal features of *Panurus*, equally dissents from this view as from that taken by Macgillivray and others who referred it to the Finches, declaring it to be a genuine, though not typical, Titmouse, related, as Mr. Swinhoe some time ago suggested to him, to *Suthora*, but altogether nearer to *Parus* than to any of the exotic genera (*Suthora, Liothrix* and *Cyclorhis*) examined by him. Where osteology fails to determine the kindred of a genus, as happens in many of the comparatively-uniform *Passeres*, other characters become of greater weight, and on the whole the Editor deems he is justified in referring this bird to a distinct family, as families are commonly accepted in that Order.

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* This name was first used in 1758 (Syst. Nat. Ed. 10, i. p. 190), but why it was applied is not clear. *Biarmia* means the country about Perm, and there is no ground for thinking that the species had ever been said to be an inhabitant of that part of Russia. It is barely possible that Linnæus misunderstood the meaning of Albin's *Beardmanica* (a latinized form of "Beardman" or some cognate word allied to its modern Dutch name *Baardmannetje*) and tried to improve upon it. Temminck, many years later, certainly made the contrary mistake, calling a South-African Falcon *Falco biarmicus.*

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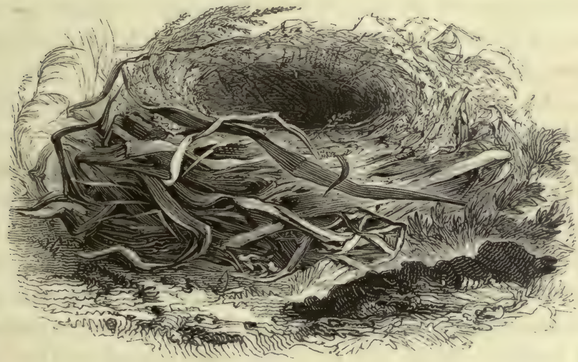
* No two authors seem agreed as to the limits of this family, which as often used probably comprehends members of several others, and requires careful examination and revision.

From the generally inaccessible nature of reed-beds growing at the sides of rivers and other inland waters—the places mostly frequented by this species, its habits were for a long time little watched and therefore little known; but they are now very fairly understood. The nest and eggs were first described and figured by Nozeman, who, in June, 1779, discovered that the bird bred in Holland, but his account was neglected by most subsequent authors. In 1826 two of its nests with their eggs, found at Horsey in Norfolk, were sent to the Author of this work (Zool. Journ. iii. pp. 85, 86), and were probably the first ever taken in this country. These nests were placed near the ground, being sustained only an inch or two above the surface by the coarse grass-stems on which they were fixed, and were composed entirely of dry bents, the finer ones forming the lining and others increasing



in substance, making up the exterior. In general, however, the nest is built of leaves of the reed, intermixed more or less with blades of sedge or grass, and is lined with the top of the reed, the whole being placed in a tuft of grass or nettles, or fixed among broken-down reeds, but it is never suspended between the stems, and is always open or cup-shaped, and thus in form as in material is quite unlike the nest of any species of Titmouse. The eggs are from four or five to seven or eight in number, measuring from ·73 to ·61 by from ·57 to ·51 in., and in appearance differ entirely from those of any other British bird, though perhaps they have a leaning towards those of some of the Buntings. They are white and shining but not very transparent, with a few minute specks, splashes and short irregular lines of dark reddish-brown, and are not subject to very much variety in colour or marking.

The food of this bird had been considered to consist entirely of insects and the seeds of aquatic plants, until in May, 1830, Mr. H. W. Dikes of Hull announced (Mag. Nat. Hist. iii. p. 239) that small shell-bearing mollusks were largely consumed by it. He found that in three examples examined by him the crop did not contain a single seed, but was completely filled with the *Succinea amphibia* in a perfect state, the shells being unbroken, though singularly closely packed together. The crop of one bird, which was not larger than a hazel nut, contained twenty of these mollusks, some of them of a good size, besides four of the *Pupa muscorum*, the shell of all, fragile as that of the *Succinea* is, being quite uninjured. "The shell", he adds, "appears to be passed into the stomach in the same perfect state, as I discovered one, which I presume had been recently swallowed, quite entire. They are not, however, voided in this state, for I found the stomach to be full of small fragments of shell, in a greater or less degree of decomposition. This work of destruction is accomplished by the action of the stomach, aided by the trituration of numerous sharp angular fragments of quartz, which had been instinctively swallowed, and by which the minute division of the shells is most completely effected." It should perhaps be remarked that, though there is not the slightest reason to doubt Mr. Dike's statement in the instances he noticed, the evidence of all other observers is in favour of the seed of the reed (*Arundo phragmites*) being the staple food of this species in winter, but at other seasons the numerous reed-haunting insects in their various stages.

In the same year Hoy described (Mag. Nat. Hist. iii. p. 328) the habits of this species as noticed by himself. "The borders of the large pieces of fresh water in Norfolk called Broads, particularly Hickling and Horsey Broads, are the favourite places of resort of this bird; indeed it is to be met with in that neighbourhood wherever there are reeds in any quantity, with fenny land adjoining. During the autumn and winter they are found dispersed, generally in small parties, throughout the whole length of the Suffolk coast, wherever there are large tracts of reeds." He goes on to say that he had found it numerous in the breeding-season on the skirts of Whittlesea Mere, in Huntingdonshire, and that it was not uncommon in the fens of Lincolnshire. After describing the nest and eggs, he mentions that in winter, when the birds were intently searching for food, he had taken them with a birdlime twig attached to the end of a fishing-rod, and that when alarmed by any sudden noise, or the passing of a Hawk, they utter their shrill musical notes, and conceal themselves among the thick bottom of the reeds, but soon resume their station, climbing the upright stems with the greatest facility. When feeding they often hang head downwards, and assume most beautiful attitudes. "I have been enabled", he continues, "to watch their motions when in search of insects, having, when there has been a little wind stirring, been often within a few feet of them, quite unnoticed, among the thick reeds. Was it not for their note betraying them, they would be but seldom seen." He concludes by saying that they appear to keep in families until the pairing-season, but that they occasionally congregated in large flocks, particularly in October, when they are migrating from their breeding-places.

To the foregoing accounts even the long and intimate acquaintance with this species enjoyed by Mr. Stevenson enabled him to add but little that is new. It would seem to begin to build its nest about the end of March, and he has known the full number of eggs laid by the 7th or 8th of April*. As soon as the breeding-season is over these birds collect in flocks and perform short migratory trips from one broad to another in search of food, the flocks containing in sharp weather as many as forty or fifty, or even more. At this season the bird will visit localities in which it does not breed, such as the marshes at Cley and Blakeney on the seacoast. "When shooting at Surlingham in the winter months", he says, "I have more than once observed the arrival of a flock from some neighbouring broad, their presence overhead being indicated by the clear ringing sound of their silvery notes, uttered preparatory to their pitching into the nearest reed bed, and in autumn, after roosting in small parties on the reeds, they will fly up simultaneously soon after sunrise, swarming like a flock of bees; and uttering in full chorus their pretty song, disperse themselves over the reed beds for their morning's meal. Delicate as these little creatures appear, I have found them during the sharpest frosts, when the snipe had left the half frozen waters for upland springs and drains, still busy amongst the reed stems, as lively and musical as ever."

Mr. Blyth's remarks, already mentioned, on the habits of this species in captivity, require further notice. He found it to be hardy, thriving on almost any kind of food, garrulous, extremely fond of society, and unceasingly active, often hanging by one leg to the top of the cage, scratching the head of its fellow-prisoners, and even teaching them to return the good office. He noticed also that it frequently places one foot upon its food while picking the morsel to pieces, but that it has no notion of hammering at a seed, though it would wait patiently by the side of a Titmouse, which was so employed, and when the seed was broken try to make off with the prize. He further observed that its stomach "is extremely strong and muscular," resembling that of a Finch or Bunting, and that its mode of progression on the ground is not by hopping, but "by a curious and peculiar shuffling walk, somewhat like the strut of a Chaffinch, but with the head near the ground." In his second notice of the species he again returns to this peculiarity, which he there terms "a decided walk," and adds that his captive, the better to get at the food, would jump into the seed-pan, "scratching with his feet much in the manner of a gallinaceous bird." This habit of walking instead of hopping is not acquired in confinement, for Vieillot was informed by the younger Baillon that he had seen this species running like a Wagtail on the leaves of water-plants or on the ice.

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* Second broods are no doubt often if not usually produced. The Editor, in the beginning of June, 1873, was shewn, at Ranworth Broad, fresh eggs which could not have been taken very long. At this season the birds are not easily observed, owing to the thickness of the reed-beds they frequent, while their note is then a very feeble chirp and seldom uttered.

This bird formerly bred in most of the south-eastern and eastern counties of England, but nowadays probably the broads of Norfolk alone offer it a home, and even there its numbers have so greatly diminished of late years that, like other very local species, it runs great risk of extirpation. A few may still breed as heretofore in East Suffolk, in Essex, Kent or even Surrey, but there is no satisfactory evidence that such is the case. Its decrease can be sufficiently accounted for by the draining of fens and marshes and the concurrent or consequent destruction of the reed-beds it loves, but there is reason to fear lest its extermination be hastened by the greed of collectors. The long series of engineering operations, completed in 1851 by the draining of Whittlesea Mere, closed its career as a denizen of Huntingdonshire and Cambridgeshire, while its expulsion from Lincolnshire, where it was once common, was doubtless of older date, and Mr. Cordeaux says he has never met with an example killed in that county. From Montagu's account it would seem to have bred in Sussex in his time, but it does so no longer, as Mr. Knox testifies, saying that though formerly not unusual near Pevensey it had, even in 1849, become rare, "most of the reed-beds having been removed to admit of the water running freely through the dykes." Its old haunts at the mouth of the Medway and along the Thames have in like manner been so changed that in the course of the last five-and-thirty years they have ceased to be frequented by it, as was the case when this work was first published, and Barking Creek and Erith, where it was observed not long before that time, have assuredly been abandoned. Nor can it be any more heard of higher up the valley of the river, though it used to be found so far as Oxford, and, if we can trust Pennant, it even crossed the watershed of England, for he says he had seen it near Gloucester. But there is no reason to suppose that it ever bred so far to the westward, and its occurrence may have been casual, for it has been recorded from still more remote localities, as St. Levan in Cornwall, according to Mr. Rodd, and Aqualate Mere, in Staffordshire, and on the Dove, by Mr. Garner in his 'Natural History' of that county. The assertion frequently made by authors, that it has been taken in Lancashire originated in a misprint; but Mr. More was assured by Waterton that it had once bred on the lake at Walton, which is the most northerly spot in the United Kingdom where it can positively be said to have occurred, since the example seen by Mr. Mark Booth at Kirkleatham (Zool. p. 1135) was not obtained, and no trust can be placed in the supposition of its having been observed in Scotland. Its reported occurrence in Ireland by Thompson is equally open to doubt.

Eastward from England this species is pretty plentiful in parts of Holland, and is, or used to be, exported thence in some numbers as a cage-bird. It has occurred in Heligoland, which must be regarded as the most northern limit of its range. Information, for which the Editor is indebted to Prof. Reinhardt, shews that, notwithstanding what Albin and Edwards say, its appearance in any part of Denmark proper is very doubtful, though it has several times been met with in Holstein. In the rest of Germany it is rare and local. According to Messrs. Sharpe and Dresser, Prof. Radde has observed it on the Bug in Poland. In Southern Russia it is plentiful on the Don and the Volga and, as already mentioned, on the shores of the seas into which those rivers empty themselves. Further to the eastward it has not been noticed. Mr. Robson reports it from Smyrna and Varna. In Greece it is said to be often seen in autumn, and Lord Lilford observed it in Albania, while it would seem to be found not unfrequently along the Danube, and to abound in Hungary, though very uncommon, according to Mr. Danford, in Transsylvania. It inhabits suitable situations in Italy and Sicily, and Mr. Saunders observed it in Southern Spain. In France it is extremely local and of rare appearance, but it occurs more regularly in Belgium. Throughout the continent it is considered a migratory bird, not usually wintering in its breeding-quarters, while with us its habits are much more sedentary.

In the adult male, when alive, the bill and irides are of a fine delicate yellow: the top of the head bluish-grey; a black patch on the lore extends half way over the eye above, and beneath it to the base of the ear-coverts, joining a loose tuft of long, black, lanceolate feathers, springing from the side of the chin and throat, and forming a pointed moustache, three-quarters of an inch in length, which when erected casts a shadow on the neck, as seen in the figure; ear-coverts and side of the neck, pearl-grey; nape, mantle, back and rump, bright orange-tawny; upper tail-coverts and three middle pair of tail-quills, deep rufous, the third pair of the latter the same, tipped with an indistinct triangular spot of greyish-white, the second pair, white on the distal end of the outer and adjoining part of the inner web, the former being mottled with grey, the outer pair black at the base and on the greater part of the inner web, the rest being white; the wing-quills brownish-black, the first six primaries being more or less broadly edged outwardly and tipped with white, all the rest with deep rufous, while the tertials are white on the inner web, which has a rufous edge; the lesser wing-coverts greyish, tipped with tawny; the other wing-coverts brownish-black, broadly edged and tipped with rufous. Chin and throat, dull white, the sides of the latter tinged with rose-colour, which extends across the breast, passing into pale tawny on the lower wing-coverts, belly and vent; the flanks deep orange-tawny; lower tail-coverts black: legs, toes and claws, black.

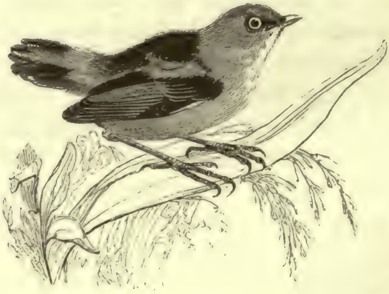
The length is rather more than six inches, of which the tail is about half. From the carpal joint to the tip of the wing two inches and one-quarter. Dutch specimens are said to be rather larger than those from England.

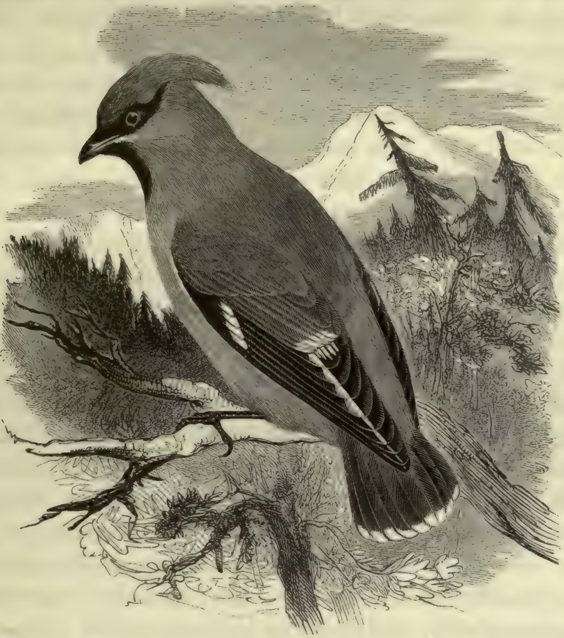
In the old female the top of the head is dull brownish-fawn, the lores and mystacial tufts are of a paler shade of the same colour, the chin and throat are suffused with pale brown, the rose-colour of the breast is less conspicuous, and the lower tail-coverts are pale orange-tawny: in other respects she resembles the male, but her tints are less bright.

The young of the year resemble the adult female, but they have the crown of the head and the middle of the back striped with black, and the bill is yellowish-brown.

In young birds from the nest, as figured below, the back, wings and tail, except the middle feathers, are patched with black; the tertials want the broad white inner webs; the rest of the body is pale fawn, the bill brownish horn-colour, the legs light brown; but even at this age the males have the lores black.

The name by which this species is commonly known in the districts it frequents is Reed-Pheasant. Reedling, used for it by several authors, would certainly be preferable to Titmouse, had not some of the aquatic Warblers been also so called.





AMPELIS GARRULUS, Linnæus*.

THE WAXWING.

Bombycilla garrula.

AMPELIS, *Linnæus**.—Bill strong, short and straight; broad at the base; both mandibles slightly hooked at the tip, and the upper one notched. Gape wide, without bristles. Nostrils basal, oval and large, partly concealed by closely-set feathers directed forwards. Feathers of the head forming an elongated erectile crest. Wings long, with ten primaries, the first nearly aborted, the second the longest in the wing, but the third nearly equal to it. Tail short and almost even. Legs with the tarsus scutellated in front, and shorter than the middle toe with its claw; toes stout. Plumage very soft.

THE WAXWING is one of the most beautiful of the birds that visit this country, and for many years especially attracted the attention of ornithologists, not so much from the brilliant, varied and yet harmonious colours of its plumage, the singular grace of its form, the irregular and remarkable character of its immigrations, or even from its being the sole representative in Europe of a peculiar family of the Class, but because of the mystery which enwrapped the place of its birth and seemed to defy the scrutiny of the boldest explorers, who had in vain sought a solution of the puzzle in the wildest and most inhospitable tracts of the globe. This mystery was, in the year 1856, dispelled by the late Mr. John Wolley, and the younger naturalists of the present day can hardly realize the delight felt by their predecessors at the news of his discovery, which was published early in the following year.

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* Syst. Nat. Ed. 12, i. p. 297 (1766).

Not only in this country, but throughout the greater part of the European continent, had the Waxwing been long known as a bird which shewed itself in winter at uncertain intervals. Sometimes years passed without its being seen at all, and then, perhaps, for two or three seasons in succession, vast flocks would suddenly appear, in some places swarming upon the various berry-bearing bushes or trees, greedily devouring their fruits, and then disappearing as unaccountably, or dispersing throughout the district. In earlier times, and possibly the belief lingers even nowadays among the ignorant of some countries, this bird was looked upon as the harbinger of war, pestilence or famine, and no doubt whenever its arrival happened to fall in with one or other of those disasters, the coincidence was made the most of by persons prone to superstitious auguries. In some cases, indeed, the belief was, perhaps, not quite groundless, for whatever be the causes which prompt this bird's wanderings—and as yet they have not been ascertained, it does not seem unreasonable to ascribe them in the first place to scarcity of food, induced most likely by inclement summers, which would equally affect crops of man's planting, and so produce dearth, with its constant comrade disease. The imperfection of our records, however, almost precludes the student of history from entertaining himself with any serious investigation which would throw light on this question, interesting as it might be, for few of the older writers give the dates of the Waxwing's visitations.* In our own country this superstition does not seem to have obtained, possibly because the bird has never occurred with us in such countless hordes as those which from time to time invade parts of the continent, and its earliest recorded appearance in England is by Lister,† who, in a letter to Ray (Phil. Trans. 1685, No. 175, p. 1161, fig. 9), says that one or two were shot at York in January, 1680 (or, to use the New Style, 1681). His figure, though rude, sufficiently shews the species, to which he gave the English name of "Silk-tail." Johnson, another of Ray's correspondents, writing to him from Brignall, in Yorkshire, in May, 1686, describes two which had been killed in the preceding March, saying, "They came near us in great flocks, like Fieldfares, and fed upon haws as they do." Again, Thoresby, in a letter to Ray dated "Leeds, April 27, 1703," mentions a third visitation:—"I am tempted to think that the German Silk-tail," he says, "is become natural to us, there being no less than three killed nigh this town the last winter."

To come to later times, White of Selborne mentions a

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* To help those who would try to correlate the inroads of the Waxwing with human affliction, it may be mentioned that Aldrovandus records a vast irruption of these Goths into Italy in the year (1530) the Emperor Charles V. was crowned at Bologna. According to Gesner, there was so great a number of them on the Rhine, between Mainz and Bingen, in 1552, that when flying they cast a shade like that of nightfall. In 1571, says the former authority, they appeared again in Italy about Modena and Placentia, with much foresight avoiding Ferrara, where an earthquake and floods soon after happened, while earlier in the same year they no less astonished the Belgians by an invasion in force. Some old writers suggest that this bird is the marvellous *incendiaria* (otherwise *incineraria*) *avis* of Pliny (lib. x. cap. 13), venturing even to identify that with the equally strange bird which, according to his information (lib. x. cap. 47), was found in the great Hercynian Forest, and, in the words of Philemon Holland (i. p. 295), had "feathers shining like fire in the night season." There does not really seem to be the slightest connection between these two wonderful birds; but as Pliny, our only authority, expressly says he had seen neither, and that no one could tell him what the former was, the matter is hardly worth discussing, the more so since Aldrovandus long ago disposed of it.

† It is not named in Merrett's 'Pinax,' published in 1667, but a letter to him from Sir T. Browne, in September, 1668, shews that it was well known to that writer, and had therefore doubtless occurred in England before it came under Lister's notice.

Waxwing killed in January, 1767; and, in 1776, Pennant asserted that the species came about Edinburgh annually in February—a statement which was perhaps hardly an exaggeration. But it is impossible to fix the precise time of this bird's visitations, as Latham, for instance, states that one was killed at Eltham in the winter of 1781, without indicating whether it was in the winter of 1780-81 or that of 1781-82. Many other writers have followed the same vague practice. Thus Patrick, as quoted by Mr. Gray, says that a vast flock appeared near Hamilton in the winter of 1782. Hayes mentions a pair shot at Hanwell in December, 1783, the male of which lived for some time in the menagery at Osterly. Tunstall, according to a note by Latham in the last edition of Pennant's 'British Zoology,' records many flocks seen in 1787 all over the county of York. Walcott and Pennant give 1788 for the occurrence of other specimens, and Lewin in 1790 said it was frequently shot in England. Beilby, who wrote the letterpress of Bewick's 'Land Birds,' says that several were taken in Northumberland and Durham in 1790 and 1791. Bewick himself says the same of 1803, in which last year Graves mentions that a number were also shot near Camberwell. According to Selby large flocks were dispersed throughout the kingdom in 1810, a few more came under his inspection in February, 1822, and several were observed in 1823, while in 1827 Waxwings again visited this island. In 1829 an example was killed, says Couch, at Lostwithiel. But there is no need to recount special cases, it being here sufficient to say that hardly a year passes without some birds finding their way hither, and that the winters of 1830-31, 1834-35, 1849-50 and 1866-67 were remarkable for the numerous occurrences of this species. To judge from recent experience the flocks first commonly reach our shores towards the end of November;* but whether there is a continuous stream of immigrants is unknown. If there is not the birds would seem generally to escape much notice until they have wandered from the place of their land-fall, and thus it may happen that it is not until they have been for some six or eight weeks in the country and have become pretty widely dispersed that the greatest numbers are observed, and, according to the prevalent custom, shot. The visitation of 1849-50 is the first of those above mentioned concerning which our records are at all complete, and it appears from Mr. Newman's summary of the observations reported in the 'Zoologist' alone that 586 examples were noticed between November and March—nearly half of which occurred in the second and third weeks of January. The visitation of 1866-67 does not seem to have been so great as regards England; and though the birds extended their wanderings to the south-western counties of England, yet Norfolk furnished incomparably the largest number of examples. In that county, according to Mr. Stevenson (who has supplied this work with a valuable paper on the immigration), 144 specimens were obtained on this occasion, and a flock of about sixty was in one case seen. In Scotland on the other hand more birds would appear to have been then observed than in 1849-50, and in Aberdeenshire and Moray, according to Mr. Gray, they were seen in flocks of forty or fifty.

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* The immigration sometimes sets in earlier, and Mr. Joseph Clarke communicated to former editions of this work the fact that in August, 1835, he killed a male out of a flock at Saffron-Walden. The latest date of occurrence is recorded by Mr. Stevenson, who says that in 1853 he saw a specimen which had been killed at North Walsham in the first week of May.

Almost every county in England seems to have been visited by the Waxwing, but its occurrence on the eastern side of this island is far more frequent than on the western. Still it occasionally appears in Ireland, and, when Mr. Watters wrote, he said there were some fifteen or twenty authenticated instances of its occurrence in various parts of that kingdom, most of which appear to have been in the eastern or northern counties. Mr. Gray has not been able to trace it in the Outer Hebrides, but it has been shot in Skye. It has also been obtained in Orkney, Shetland and the Færoes. On the continent its range is very wide, extending from Norway on the west to the shores of the Sea of Ochotsk on the east—in winter reaching to the south of France and even of Italy, since Dr. Salvadori mentions a specimen procured near Naples. There is no reason to believe that it ever crosses the Mediterranean nor any record of its appearance in the Iberian or Greek peninsulas, but it has been obtained near Constantinople and seems almost yearly to visit the Crimea. Further eastward its southern limits cannot be given. None of the Indian naturalists have observed it, but it is a winter visitor to some parts at least of China, and it has also been recorded from Japan. Our Waxwing further inhabits a large portion of North America, in winter extending along the Rocky Mountains and the plains as far south, according to Dr. Coues, as lat. 35°. At the head of the Powder river in Nebraska, Mr. Drexler says he saw "millions" of birds of this species—every tree for miles being filled with them. It is a regular visitor to the shores of Lakes Michigan and Erie, but further to the east it is rarely seen along the United States border, though it roves occasionally as far as New England and even Nova Scotia.

It were needless here to repeat the statements and surmises of former writers as to the nidification of this bird. Nearly all such have been more or less wide of the mark.* The very plain statement communicated by Wolley to the Zoological Society, 24th March, 1857, proved them to be fables and set them at rest for ever. In years gone by Richardson, one of the heroes of Arctic enterprise, failed to ascertain any facts of its breeding in the Fur-countries of the North-West, and, more recently, Dr. von Middendorff, the intrepid Siberian traveller, was equally unsuccessful in the North-East. Yet it may be safely said that there was no bird for whose egg oologists throughout the world more longed. Various were the plans of which they bethought them for obtaining this coveted treasure. Many tried to keep pairs of living birds in the hope of inducing them to breed in captivity. The Baron R. König-Warthausen, we are told, went even to the trouble of caging a whole flock; but all to no purpose, and it cannot be doubted that prior to 1856 no one with any pretension to the title of ornithologist had ever set eyes on a real egg or nest of a Waxwing.* It is however due to Scandinavian naturalists to say that several of them, who had travelled in Lapland, had expressed themselves confident that the bird did at least sometimes breed in that country, and moreover that it was reliance on their general accuracy which kept alive Wolley's hope of one day finding the long-sought rarity. Of such hope there was need, since it was not until the fourth summer of his oological explorations that his efforts were crowned with success.

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* Linnæus said of it, "*nidificat in Alpibus*", which was some approach to the truth, for he did not mean the Alps as commonly understood, but the mountains of Scandinavia in which sense he often uses the word "*Alpes.*" That untrustworthy compiler, J. F. Gmelin, mistaking Strahlenberg's assertion to Frisch, said "*nidus in rupium antris*", and the statement has been repeated in a work on British ornithology printed only a few years ago. Pennant in his later writings was more correct than most men of his time. Informed probably by his Scandinavian correspondents, he says that the birds retire to the forests of the Arctic Circle to breed. Most people thought the home of the species was in Central Asia, "whence," to use Bonaparte's phrase, "like the Tartars in former times, they make their irregular excursions."

For lack of space the full details of this discovery cannot here be given.† It was effected on Saturday, 7th June, 1856, near Sadio on the Kittila river in Kemi-Lappmark, by Ludwig Matthias Knoblock, Wolley's most trusted follower, who worked night and day to fulfil the wishes of his master, at that time engaged elsewhere. The first prize was a nest‡ containing two eggs, from which, on the 11th (three more eggs having been laid in the meantime), Ludwig snared the cock; and altogether Wolley's collectors obtained for him in that year some six nests and twenty-nine of these hitherto unknown eggs, with several of the parents, killed (for the sake of identification) from the nests, and a young bird scarcely able to fly. Sending his treasures in the autumn to the Editor, Wolley wrote:—"The young Waxwing I should wish our old friend Yarrell to describe, for I think it would give him pleasure. He might exhibit a nest and eggs at the same time with a pair of birds in breeding plumage to the Zoological Society." In the meanwhile however the Author of this work had passed away, and the privilege of exhibiting the specimens devolved upon the Editor's brother, Mr. Edward Newton, who took charge of them at the meeting of that Society, when as before mentioned Wolley's communication was read.

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* Thienemann figured two eggs (Fortpfl. ges. Vög. tab. xxx. fig. 8 *a*, *b*) as those of this species, but in his subsequently-published letterpress (p. 343, note) he says he believes they were those of a North-American Thrush.

† They will be found in 'The Ibis' for 1861 (pp. 92–106) and are accompanied by a plate on which half-a-dozen chosen specimens of the eggs are depicted as Mr. Hewitson only could depict them.

‡ The actual finder of this nest was Johan of Sadio, one of a band of seven lads who were working under Ludwig.

This was subsequently printed in the Society's "Proceedings" (1857, pp. 55, 56), and the most important part is as follows:—"The Waxwing, as observed in Lapland, makes a good-sized and substantial nest, but without much indication of advanced art. It is of some depth, and regularly shaped, though built of rather intractable materials. As in those of many other birds in the Arctic forests, the main substance is of the kind of lichen commonly called tree-hair, which hangs so abundantly from the branches of almost every tree. This lichen somewhat resembles a mass of delicate rootlets, or perhaps may be compared to coarse brown wool; but some of it is whitish, and in one nest there is a little of this mixed with the ordinary brown or black. This main substance of the nest is strengthened below by a platform of dead twigs, and higher up towards the interior by a greater or less amount of flowering stalks of grass, and occasionally pieces of equisetum. It is also interspersed with a little rein-deer lichen, perhaps a sprig or two of green moss, and even some pieces of willow cotton. There may also be observed a little of the very fine silvery-looking fibre of grass leaves which probably have been reduced to that condition by long soaking in water. In one of the nests examined there were several pen-feathers of small birds as an apology for a lining.

"The nest of the Waxwing is built on the branch of a tree, not near the bole,* and rather, as one of the observers has said, standing up from the branch like a Fieldfare's or other Thrush's nest, than supported by twigs touching it at the sides, as the nests of many birds are supported. Of six nests, four were in small Spruces, one in a good-sized Scotch fir, and one in a Birch—all placed at a height of from 6 to 12 feet above the ground. The tree in several instances was unhealthy, thin and scraggy in its branches, to which there hung a good deal of hair lichen; and the nest seems generally much exposed, though from its resemblance to the lichen hanging near, it might escape the eye. The nests found were in parts of the forest considerably open, once or twice on the side of low hills, near a river, or with an undergrowth of dwarf swamp-loving shrubs. But at present we have scarcely enough examples to show that there is a preference for any particular kind of ground."

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* The specimen here figured (page 537), the most perfect seen by the Editor, is however placed close to the bole of a young Scotch fir. It was taken in Finnish Lapland in 1861, and is now in the Cambridge Museum.

In the summer of 1857 the Waxwing seems to have been still more rarely distributed in Lapland than it had been in the preceding year. Wolley, in spite of every exertion, was unable to set eyes on a living bird. In vain he wandered through the woods and scarcely slept. He took a nest which had been forsaken a day or two before, but its eggs by some unknown means had been destroyed so fast as they were laid. His army of collectors got for him only eight eggs—a nest of five taken on an island at the mouth of the Kemi river having been intercepted by a Finnish traveller to whom the finder sold it for the Museum at Helsingfors. But in 1858 the state of things was very different. An enormous number of Waxwings settled for the breeding-season throughout the greater part of the district which had hitherto been the scene of Wolley's researches, and his collectors found nearly 150 nests producing no fewer than 666 eggs, while about a score more were obtained by a Prussian dealer who happened that year to be in the country. This same summer saw an Englishman accomplish what Wolley only partially succeeded in doing. Mr. Dresser found a small colony of Waxwings on an island in the Baltic near Uleåborg, which prior information would have led any one to suppose was beyond the breeding-range of the species, and with his own hands took a nest, an egg and two young birds. In 1859, the Waxwing bred, but not numerously, in the Muonioniska and Kittila districts, and so likewise in 1860. Since then its nests have been found in the same tract almost every year, but never, so far as appears, in such inordinate numbers as in 1858, and but for the discovery of 1856 its presence would most likely have passed unnoticed as it doubtless had done before,* while, according to HH. Palmén and Sahlberg, in 1867 not a single Waxwing was seen in the district.

Thus it would appear that the Waxwing is as irregular in the choice of its summer as of its winter quarters, and the causes which influence its movements still remain for the investigation of the curious. Its diet varies according to the season: in summer consisting mainly of insects, which it catches on the wing, springing upon them from its look-out station on the topmost twig of a tree, but berries of various kinds even then do not come amiss, while in winter these alone form its food, and upon them it will literally gorge itself, coming into suburban gardens to obtain them. It is a somewhat stupid and a remarkably silent bird, only occasionally uttering a low call-note, which is trilling and musical, but when gathered in large flocks the emission of this from numerous throats makes a loud twittering noise. In confinement it is especially dull, while its greediness renders it a very unpleasing cage-bird.

Since the discovery which has shed so much light on the history of the Waxwing, it has been found breeding in places far apart. Wheelwright says he obtained eggs in 1862 from near Quickjock, and its nests have since been taken in the valley of the Tana. Herr Collett gives good reason for supposing that in certain years it breeds sporadically in southern Norway, and it is believed to do the same in many parts of Finland. There can also be no doubt of its breeding on the shores of the White Sea and other places in northern Russia, but the statements as to its nests having been built in Germany, Holland, and even (Zool. s.s.

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* Wolley satisfied himself from the evidence of a few people that in some former years the bird had been very abundant, but to the majority it was quite unknown.

p. 1294) England must be regarded with much suspicion. In America too its breeding-places have at last been discovered, a nest with one egg having been found in 1861 by Kennicott on the Yukon, and Mr. MacFarlane having met with the like success on the Anderson River.

The eggs, from five to six or occasionally seven in number, are very variable both in size and colour. They measure from 1·11 to ·82 by from ·73 to ·64 in., while a dwarf specimen is only ·64 by ·52 in. Yet they bear a family likeness to each other, and the mutual resemblance of those laid in the same nest is almost always strong. The ground is most generally of a delicate sea-green, sometimes fading to french-white, but very often of a more or less pale olive, and occasionally of a dull purplish-grey. On this are almost always bold blotches, spots and specks of deep brownish-black, though sometimes the edges are blurred. Beneath these stronger markings there is nearly always a series of blotches or streaks of greyish-lilac, and among them well-defined spots or specks of yellowish-brown are interspersed. In some eggs the darkest markings are quite wanting, in others the ground is of a deep olive colour.

In the adult male the bill is black, the edges at the base light brown : the irides dark red : the forehead deep bay passing into light brocoli-brown on the top of the head, whence springs the fine crest ; a black band runs from the nostrils and base of the upper mandible, over the lore, round the eye, and backward to the occiput underneath the crest ; ear-coverts, nape and sides of the neck light brocoli-brown, becoming darker on the scapulars, small wing-coverts and back, and passing into brownish-grey on the rump and upper tail-coverts ; the coverts of the primaries black, tipped with white, forming a conspicuous bar ; primaries brownish-black, with an elongated patch of white or yellow at the tip of the outer web of more or fewer of them, except the first, which patch in fine specimens extends along the tip of the inner web ; the secondaries and tertials greyish-black, the former tipped with pure white on the outer web—the shafts of four or more of them generally terminating in a small, nail-like, oblong appendage, in colour and substance resembling scarlet sealing-wax, the outer tertial also occasionally bears a like appendage; these appendages are merely expanded and coloured horny prolongations of the shafts of the feathers beyond their webs;* tail-quills smoke-grey at the base, black towards the end, and tipped with yellow, the shafts being sometimes slightly tinged with red where the webs are yellow, and some of them occasionally, though rarely, tipped with scarlet wax-like appendages, similar to those of the wings but much smaller; the chin and throat deep, glossy black; the base of the lower mandible clothed with white feathers passing into light bay on the sides of the throat, below which both bay and black are blended, into pale brocoli-brown, which prevails on the breast, becoming greyish-brown on the flanks and abdomen; lower tail-coverts bright bay; axillaries and lower wing-coverts light ash-grey; quills beneath, shining grey: legs, toes and claws black.

The whole length is rather more than eight inches. From the carpal joint to the tip of the wing, four inches and a half.

The female so closely resembles the male that the sexes cannot be unfailingly distinguished externally, but her colours are usually less bright, and in general she has fewer of the scarlet appendages on the wings and never, it is believed, any on the tail.

Wolley thus describes the nestling obtained by him:—"A young bird caught on the 5th of August, as it fluttered from the nest, had a general resemblance to the adult, though all the colours were more dull. The wax-like ends to the wing-feathers, the yellow tip to the tail, the black patch between the eye and the beak are all there, whilst the rich mahogany of the under tail-coverts is of a quieter brown; the blooming vinous colour of the head and back has not yet emerged from a homely neutral, and the crest is but just indicated by the longish feathers of the crown. The most marked difference between the adult and the young is in the throat and under-surface generally. There is at present scarcely a trace of the deep black patch of the chin, and the delicate tint of the general under-surface of the adult is replaced by mottled neutral and white. This upon examination is found to owe its appearance to those longer webs, which arising towards the root of each feather, extend as far outwards as the webs which arise nearer its tip, being very pale or white, and thus relieving, on both sides, the last-mentioned darker webs."

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* The structure of these appendages has been carefully described and compared with similar substances found in other birds by Herr C. H. Andersén (Œfvers. K. Vet.-Ak. Förhandl. 1859, pp. 219–231, pl. ii.). Their number in the Waxwing seems to depend, as Mr. Stevenson suggests, rather on constitutional vigour than on age or sex. Males have seldom less than four and females less than two—though a specimen is rarely seen without any. From five to seven is the average number in the former and from four to six in the latter. They vary much in size and shape. Examples having five or six are generally brightest in plumage.

The *Ampelidæ* are regarded by many systematists as allied to the Shrikes and Flycatchers. Others consider them to bear affinity to the Swallows. The place here assigned to the family is manifestly inappropriate, but the Editor being doubtful as to its true position leaves it as it stood in former editions. Some authorities have taken as the type of the Linnæan genus *Ampelis* a South-American bird, which belongs to a very distinct and not at all nearly-related family—the *Cotingidæ*, and call the genus which includes the present species *Bombycilla*. There can be no doubt of this treatment being wrong. The name *Ampelis* was that under which Aldrovandus described the bird in 1599, complaining of Gesner, who had, in 1555, called it *Garrulus Bohemicus*—the Bohemian Jay or Chatterer, and justly remarking that it had nothing to do with birds of the Pie-kind, that it did not chatter nor was it known to be peculiar to Bohemia. Linnæus, with whom all scientific nomenclature begins, kept what seemed good to him in both these names, using that of Aldrovandus for the genus and Gesner's first word for the species—the general likeness between a Jay and a Waxwing being sufficiently obvious; but *Ampelis* not being quoted for any other species, this is clearly the type of the Linnæan genus. *Bombycilla*, says Prof. Sundevall, may be traced to

Schwenckfeld, who, in 1603, thus rendered the common German name of the bird—*Seidenschwanz* (Silktail), just as Lister subsequently did, when he had occasion to give it an English appellation. *Bombycilla* was not used in a generic sense, as has been supposed, by Brisson, that author leaving it in his "*Genus Turdinum.*" In 1815, Bernhard Meyer invented the term *Bombyciphora* (Silk-bearer), which in the same year Temminck through accident or ignorance converted into the nonsensical *Bombycivora* (Silk-eater or, to put the most favourable interpretation on it, Moth-eater). But Gesner's epithet "*Bohemicus*" demands further attention. He so translated the German "*Behemle*" or "*Beemerle*"*—names by which, he was told, some such bird was known near Nurenberg, adding that a small kind of Thrush was also so called. The connexion of Bohemia therefore with this species merely rests on popular belief, and every one must know cases of animals' names in which such belief is altogether mistaken. Mr. Johns (British Birds in their Haunts, p. 161) has the ingenious suggestion that the bird may have been called Bohemian, because in its habits it resembles "the wandering tribes of gipsies, who were formerly called indifferently Egyptians and Bohemians." But the first application of the epithet to the Waxwing was undoubtedly German in its origin, and there is no proof of gipsies having been anciently called Bohemians or anything like it in that language. The liberty which many writers have taken with the Linnæan specific name, writing "*garrula*" for "*Garrulus,*" and thus turning a substantive which is in some degree appropriate into an adjective which is not, is also to be condemned.

There are two other well-marked species of the genus *Ampelis*. One, the *A. phœnicoptera* of Japan and south-eastern Siberia, is easily distinguished by the red tips of its remiges and rectrices, while at the same time it wants the white ends of the wing-coverts and the wax-like appendages. The other, the well-known Cedar-bird of North America, *A. cedrorum*,* has the black on the chin less distinct, wants the white on the wings, and has the belly tinged with yellow, while the lower tail-coverts are dirty yellowish-white instead of bay as in *A. garrulus* and *A. phœnicoptera*.

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* The brothers Grimm give other forms of the word, namely, *Beheimlein*, *Behaml*, *Böhemle*, and *Bömerle* (Deutsches Wörterbuch, i. 1332); and Dr. Sanders adds *Böhmlein*, *Böheimle(in)* and *Böhme* (Wörterbuch der Deutschen Sprache, i. p. 184).

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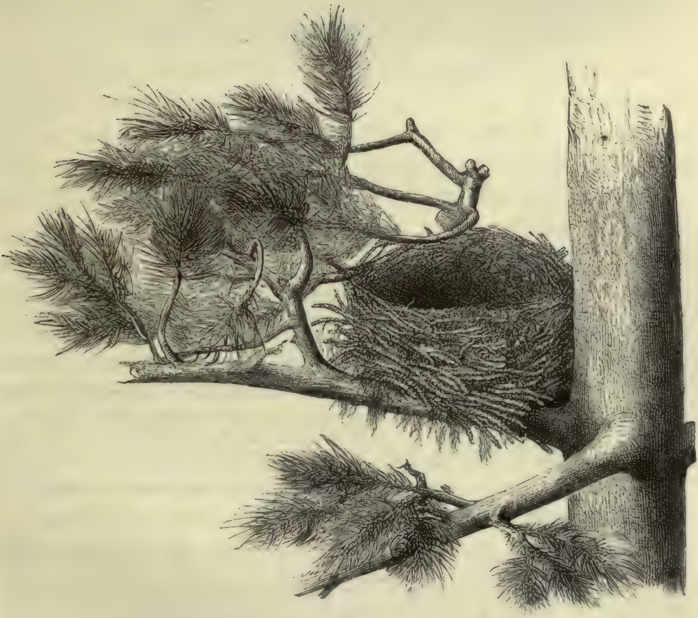
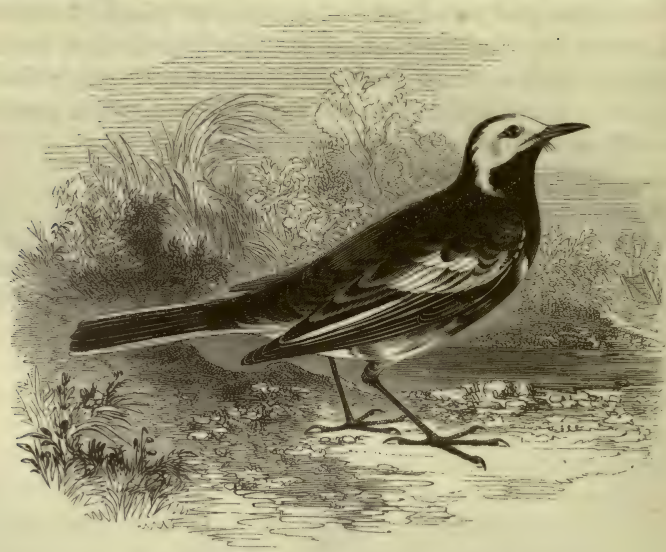
* The Editor has to confess with sorrow an attempt, made by him many years ago, to get this species enrolled among British birds (Zool., pp. 3277, 3506), which he is now quite satisfied was inexcusable. It has, however, been known to occur on board ship far from the New World, and even in waters that may fairly be termed British (Thompson, B. Ireld. ii. p. 343 ; R. Gray, B. W. Scotl. p. 109).





MOTACILLA LUGUBRIS, Temminck*.

THE PIED WAGTAIL.

Motacilla Yarrellii †.

MOTACILLA, Linnæus ‡.—Bill slender, subulate, nearly straight, very slightly notched at the tip; the mandibles nearly equal in length and their edges slightly compressed inwards. Nostrils basal, lateral, oval and partly concealed by a membrane. Wings moderate: the first primary acuminate and nearly abortive; the second, third and fourth nearly equal, and one of them the longest; the fifth considerably shorter; secondaries moderate, the tertials very long, the longest about equal to the fifth primary. Tail of twelve feathers, long and nearly even. Tarsus scutellated in front, much longer than the middle toe, which is joined to the outer toe at its base; toes moderate; claws short except that of the hind toe which in some species is elongated.

IN a communication made to the Zoological Society, July 11th, 1837, by Mr. Gould, he stated his firm conviction that the common British Pied Wagtail was specifically distinct from the *Motacilla alba* of Linnæus, with which it had hitherto been confounded, and, briefly pointing out wherein the differences lie, proposed to name the former after the Author of this work. Shortly afterwards he published some fuller observations on the two birds in the 'Magazine of Natural History' (New Ser. i. p. 459), wherein he said that while engaged upon this group during the publication of his 'Birds of Europe,' he had been surprised to find that the sprightly Pied Wagtail, so abundant in our islands at all seasons, could not be referred to any described species, and that it was very limited in its habitat; for, beside the British Islands, Norway and Sweden were the only parts of Europe whence he had been able to procure examples identical with our bird, whose place was elsewhere in Europe supplied by the true *M. alba;* which, although abundant in France, particularly in the neighbourhood of Calais, had never then been discovered in any part of England. "The characters by which these two species may be readily distinguished", Mr. Gould goes on to say, are the somewhat more robust form of the Pied Wagtail, which "in its full summer dress, has the whole of the head, chest, and back, of a full deep jet black;" while in *M. alba*, at the same season, "the throat and head alone are of this colour, the back, and the rest of the upper surface, being of a light ash-grey. In winter the two species more nearly assimilate in their colouring;" the black back of the Pied Wagtail being grey at that season, although never so light as in *M. alba*. Mr. Gould concludes by citing as additional evidence of the distinction that the female of our Pied Wagtail "never has the black back, as in the male; this part, even in summer, being dark grey; in which respect it closely resembles the other species."

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* Man. d'Orn. Ed. 2, i. p. 253 (1820); but not afterwards.

† Gould, Proc. Zool. Soc. 1837, p. 74.

‡ Syst. Nat. Ed. 12, i. p. 328 (1766).

Such being the grounds on which the Pied Wagtail was separated from *M. alba*, it has been on the whole acknowledged to be a good species; but, before considering that somewhat important question, it is needful to remark that the difference between the two birds is thought to have first been observed by Brünnich, who, in 1764 (Orn. Bor. p. 70), appended to his notice of the ordinary *M. alba* the description of a variety from Zealand, which he said "a præcedente differt capiti dorso concolore"; though at the same time he suggested that the difference arose from age or sex. Brünnich's specimen may possibly have been an example of the British form, which is known to occur occasionally in Denmark, but that cannot be proved.

It is however certain that Mr. Gould was forestalled in his recognition of our Pied Wagtail as a distinct "species"; for, in October, 1820, Temminck (Man. d'Orn. Ed. 2, i. p. 253) published the description of a bird which is unquestionably identical with it. This he called *Motacilla lugubris*, believing that by that name Pallas had described and designated it, whereas Pallas never did any such thing.* Vieillot, too, in the "Ornithologie" of the 'Encyclopédie Méthodique' (ii. p. 404), about the same time † and under the same name, most accurately described the present bird as distinct from *M. alba*, saying also that the former was of regular passage in February and March near Abbeville and Rouen, but not stopping there to breed, and that it was easily known by its note from the latter which stayed the whole summer. He adds that the specific name was given by Natterer, ‡ who however is not known to have published anything on the subject.

It is to be remarked, moreover, that while Temminck, having the supposed species of Pallas in his imagination, referred certain eastern specimens to the bird of Western Europe, Vieillot, by his clear account of the latter, fixed upon it the name *lugubris*, which according to all rule it must therefore bear. Yet, neglecting this fact, Temminck in 1835 (Man. d'Orn. Ed. 2, iii. p. 175) cancelled his original descriptions, substituting for them those of a bird from Japan, though still confounding with it that of Western Europe. In 1840 he became convinced of this error, but instead of leaving the latter under its old name, he adopted for it (*op. cit.* iv. p. 620) Mr. Gould's *yarrelli* and continued his *lugubris* to the eastern bird.* It is further clear that *M. lugubris* was admitted, before Mr. Gould's discovery, to refer to the British Pied Wagtail, since F. Boie (Isis, 1835, p. 252), after mentioning that the Paris collectors reported it as an annual visitor to certain places in their neighbourhood on its way to England, says that Delamotte (somewhat to his surprise it would seem, for he thought the fact worthy of record) met with no other species in this country as he travelled from Dover to Suffolk. In like manner Werner (Atlas des Ois. d'Eur.) figured our Pied Wagtail as *M. lugubris.*

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* There was some excuse for this mistake since Pallas's great work, 'Zoographia Rosso-Asiatica,' was not at that time accessible to Temminck, though printed in 1811. A few copies of the first volume were, it is stated, distributed, and hence its contents have an allowable claim to date from that year; but neither of the succeeding volumes were then issued, nor was the whole work to be generally procured until 1831.

† The *livraison* containing this page (as Mr. Bradshaw, the librarian of the University of Cambridge, kindly took the trouble to ascertain) was published by 7th January, 1821. Prof. A. Milne-Edwards obligingly sends the information that it appeared in December, 1820. The title-pages to the work were not issued until 1823, and bear that date.

‡ This word is spelt "Nater", but there can hardly be a doubt that it is a misprint.

As to the question whether our Pied Wagtail should be regarded as specifically distinct from the light-coloured bird which prevails on the continent opinions will doubtless still vary. The reader may gather that the Editor, by his treatment of such cases as are afforded by *Parus ater* and *Acredula caudata,* is not prone to raise local races to specific rank on slight grounds, but the present differs from those cases insomuch as specimens intermediate in colouring seem to be wanting, and, though each form not unfrequently encroaches on the other's borders, and instances of their interbreeding are said to be known, each very remarkably maintains its proper characters. The present case therefore is more analogous to that of the large northern Falcons, already described, though not exactly like it; for those two Falcons, it is believed, may be distinguished even in their earliest plumage, while the two Wagtails are indistinguishable in their youth. On the other hand some mature examples of *Falco islandus* and *F. candicans* are found presenting an approach to each other, whereas the adult Pied Wagtail—especially the cock in summer-plumage—always seems to differ conspicuously from the adult White Wagtail at the same season. The difference however is but in colour, for none in proportions, shape or structure can be satisfactorily made out.

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* Even here he made another complication, for his *M. lugubris* of 1840 includes two birds now generally regarded as distinct: one, which visits Eastern Europe and is the *M. vidua* of Prof. Sundevall, the other, found in Japan and the *M. japonica* of Mr. Swinhoe. When Prof. Schlegel came to Temminck's assistance in the 'Fauna Japonica' this error was detected, and the Japanese form therein appeared as "*M. lugens,* Illig."—but whether Illiger ever described such a bird is unknown to the Editor.

The Pied Wagtail, though a very common bird, is deservedly admired for the elegance of its form, as well as for the activity and airy lightness exhibited in all its actions. It is ever in motion, running with facility by a rapid succession of steps in pursuit of its insect food, moving from place to place by short undulating flights, uttering a cheerful chirping note while on the wing, alighting again on the ground, a roof or a wall, with a sylph-like buoyancy, and a graceful fanning motion of the tail, from which it derives its name. The song of the cock is loud and joyous, but not very often uttered. He is always among the first of small birds to observe the danger threatened by a hawk or cat, and in the former case generally leads the attack on the enemy, rising high in air and pursuing the intruder for a considerable distance. The Pied Wagtail but seldom perches on a tree or bush. It frequents the vicinity of ponds and streams, moist pastures or grassy lawns, and may be frequently seen wading in shallow water, seeking for various aquatic insects, or their larvæ. If confined in a suitable place it will even take larger prey, for Mr. Rayner, of Uxbridge, noticed, during the summer and autumn of 1837, that several Wagtails, of this and the Yellow species, presently to be described, were very expert in catching and feeding on minnows which were in a fountain in the centre of his aviary. The birds would "hover over the water," he adds, "and, as they skim the surface, catch the minnow as it approaches the top of the water in the most dexterous manner, and I was much surprised at the wariness and cunning of some Blackbirds and Thrushes in watching the Wagtails catch the minnows, and immediately seizing the prize for their own dinner." In the Fish-House of the Zoological Society a pair of Pied Wagtails in two successive summers bred and reared their young in captivity.

The nest is built of moss, dead grass and fibrous roots, lined with hair and a few feathers. It is generally placed on the side of a bank or of a wall, overgrown with ivy or against which a tree is trained; while the thatch of a building, a fuel-stack, a hay-rick or a convenient nook among rocks or large stones, will often afford it the shelter of which the bird is almost always desirous. Sometimes, however, all such precaution is disregarded, and several instances are known of its courting human society, and one in particular has been recorded by Jesse, where the nest was placed near the wheel of a lathe in a brazier's workshop at Taunton, amid loud and incessant noise. The eggs are four or five in number; of a french-white, finely speckled with ash-colour and occasionally blotched with dull olive. They measure from ·86 to ·73 by from ·62 to ·57 in.

When the young are able to follow the parents, the little family may be seen in meadows very busy about the feet of the cattle while grazing, availing themselves, as White observes, of the flies that settle on their legs, and probably feeding also on the worms and larvæ that are roused by the trampling of their feet.

Our Pied Wagtail is exceedingly common in all parts of the United Kingdom, reaching even St. Kilda and Unst. In all but the extreme northern parts it is, on the whole, resident throughout the year; but individually it is probably a thorough migrant, that is to say, each bird seems to move southward in winter, so that at that season the northern limits of its range are deserted, while the population of its southern limits seek quarters beyond sea, their place being supplied by birds bred further to the north. In spring this shifting movement is reversed. Mr. Cordeaux remarks that the increased cultivation of turnips in Lincolnshire has induced this species to become a winter-resident there, which it formerly was not—the roots of those vegetables sheltering the eggs or larvæ of insects which it picks out; and so dependent is it on this supply of food that when, after the drought of 1868, the crop failed, no Wagtails remained, though the season was unusually mild. Generally it is far more numerous in summer than in winter, and is gregarious in its habits when on passage from one locality to another, small flocks being often, and large flocks occasionally, seen about the vernal and autumnal periods of change. Examples have been met with in winter in Portugal and the south of Spain.* The Strickland collection contains a specimen from Tangier; but there is nothing to shew that it ever wanders further. In the south of France the evidence of its occurrence is unsatisfactory, but it is known, as has been said, in the north as a spring-visitor, though whether it ever stays to breed is doubtful. In Belgium it appears rarely, and then either at the beginning or end of winter. In Holland it would seem to occur more often, and, according to Heer Crommelin (Nederl. Tijdschr. iii. p. 245), to pair with *M. alba*. It has been frequently observed on passage, and that in large numbers, at Heligoland, and is said to have been killed in Denmark. On the west coast of Sweden and Norway it is an occasional, perhaps an annual, straggler—possibly even at times stopping to breed, and it has been met with as high as Bergen. It has never been recorded from the Færoes or Iceland.

The movements of the Pied Wagtail have been noticed by many writers, but by none more carefully than Mr. Knox, who, having lived for some years on the coast of Sussex, was singularly well placed for the observation of migratory birds in general, and paid much attention to them. A great deal of what he has so happily recorded with respect to the present bird applies equally to many others, so that his remarks deserve more than ordinary consideration, serving as they do to throw light on the whole of that mysterious subject and being those of an unusually watchful and accurate ornithologist. For want of room they cannot be here given in full, but the following summary may suffice. The Pied Wagtails which have wintered abroad reach the coast of Sussex about the middle of March, and, on fine days, Mr. Knox has frequently observed them approaching the shore, aided by a gentle breeze from the south, their well-known call-note being distinctly audible from the sea long before the birds could be seen. The neighbouring fields, where but a short time hitherto scarcely a bird of the kind was to be found, are soon tenanted by numbers, and for several days they continue dropping on the beach in small parties. The old males come first, while the females and the males of the previous year, which still partially resemble their partners, do not appear until a few days later. It may be observed, says Mr. Knox, that the white on the forehead and cheeks of these newly-arrived birds is much purer at this time than in those which have wintered in England, and the latter do not assume the summer-garb at so early a period as their more travelled brethren. After resting near the coast for a few days the new-comers proceed inland, and any good observer there stationed may perceive how much the numbers of the species increase at this season. About the middle of August there is a general return-movement towards the coast, and the Wagtails now first become gregarious. At that time Mr. Knox has frequently observed them in the interior of the county, where they remain but a few days, making way for fresh detachments, which, in their turn, follow the same route to the sea. At the end of the month, or early in September, they may be seen of a morning flying invariably from west to east, parallel to the shore, but following each other in constant succession. These flights continue from daybreak until about ten o'clock in the forenoon, and so steadily do the birds pursue their course that even when one or more of an advancing party have been shot the remainder do not fly in a different direction, but opening to right and left close their ranks and continue their progress as before. During this transit their proximity to the coast depends to some degree on the character of the country lying between the

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* Küster (Isis, 1835, p. 220) said that it was not rare in Sardinia, but from the silence of Sigg. Cara and Salvadori he was most likely mistaken.

South Downs and the sea; but as they advance towards Brighton the migrating bands, consisting chiefly of the young of the year, accumulate in vast flocks, and thus they seek the adjoining county of Kent, whence the voyage to the continent may be performed with ease and security even by birds but a few months old and unequal to protracted flights.*

The adult male in the breeding-plumage, which begins to appear in March and is completed in April, has the bill and irides almost black: the front and sides of the head white, extending over the eyes, and forming a patch on the sides of the neck; the crown and back of the head, the nape, back, scapulars, rump and upper tail-coverts, black; the small and great wing-coverts black, broadly edged and tipped with white; the primaries and secondaries black, with narrow lighter-coloured outer edges; the third, fourth and fifth primaries, with some white on the inner web; the tertials black, with broad white outer borders; the eight middle tail-feathers black; the two outer tail-feathers, on each side, white, with a black edge on the inner web; chin and throat black, which, passing upwards behind the white patch on the sides of the neck, unites with the black of the scapulars and nape; breast, belly and lower tail-coverts white; sides of the body and flanks black: legs, toes and claws black.

The whole length of the male is seven inches and a half; from the carpal joint to the end of the wing, three inches and three-eighths.

The adult female is half an inch shorter in the whole length than the male, but otherwise differs only from him, at this season, in having the back lead-grey, mottled with darker feathers.

In the adult of both sexes in winter, the black of the head and nape of the neck does not extend to the back, which is then nearly uniform ash-grey; chin and throat white;

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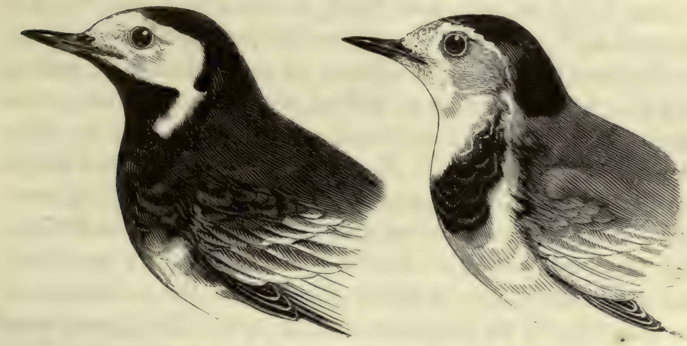
* The abstract above given of Mr. Knox's remarks (originally printed in the 'Zoologist' for 1843 and subsequently revised for his 'Ornithological Rambles') not only proves him to be a master of the observed facts relating to migration, but also, unless the Editor is mistaken, the first English ornithologist who pointed out the essential difference of the mode of emigration and immigration.

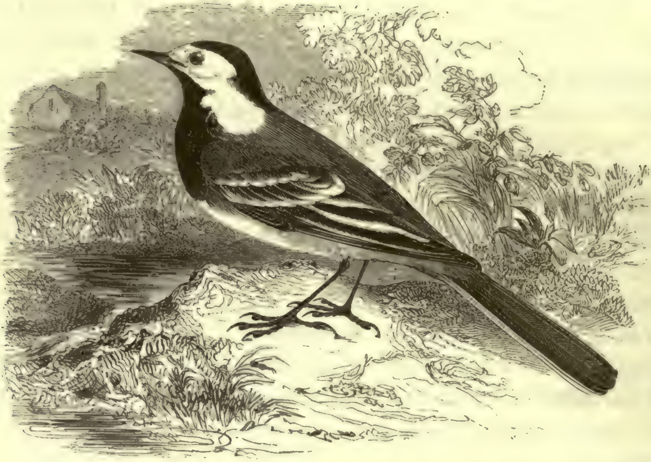
the black on the front of the neck only appearing as a crescent, the horns of which are directed upwards behind the ear-coverts. It has been said that the darker breeding-plumage is produced by an alteration of the colour of the feathers in spring, not by losing the old feathers and gaining new ones; and that the annual moult takes place in autumn. On the other hand some observers attribute the change to the wearing off of the light tips of the feathers, while others again maintain that the bird has a partial double moult. On this point judgment must be suspended until further observations are made.

Young birds of the year resemble the parents in winter, except that the head is ash-grey, like the back; the cheeks and ear-coverts are tinged with yellow, and the upper part of the breast mottled with greyish-black. In this state they are probably the *M. cinerea* of some of the older authors.

The vignette represents the appearance of the male Pied Wagtail in summer and winter.



PASSERES. *MOTACILLIDÆ.*



MOTACILLA ALBA, Linnæus*.

THE WHITE WAGTAIL.

Motacilla alba.

THE belief expressed in 1838, in the first edition of this work, that the White Wagtail would be occasionally found in this country has been verified in many instances, and it may now be regarded as an annual summer-visitor to certain localities. Its first recognized occurrence seems to have been late in the month of May, 1841, when Mr. Bond found two pairs of this bird on the banks of the reservoir at Kingsbury, and shot two males and a female (Ann. and Mag. Nat. Hist. vii. p. 350). In the spring of 1842, a specimen was shot near Carlisle, which passed into the possession of the late Mr. T. C. Heysham, and in April, 1843, three were obtained by Mr. James J. Trathan, near Falmouth (Zool. p. 188). Mr. Rodd now states that in Cornwall this bird is not uncommon in the spring-months, and the information collected by Mr. More shews that there is good reason for believing that it has bred in several parts of England. Thus

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* Syst. Nat. Ed. 12, i. p. 331 (1766).

Mr. Murray Mathew not only considers it a regular spring-visitant to North Devon, but Mr. Brodrick found a pair which had a nest in a wall near Ilfracombe. At Freshwater in the Isle of Wight also the nest is said to have been taken. A good many examples have been observed or obtained in Sussex, where it would seem to be a regular summer-visitant, and in like manner in Kent it is said to appear yearly, while the late Dr. Plomley and Mr. Gordon had no doubt of its breeding in that county. Mr. Hewitson also mentions on the authority of a correspondent that a hen bird was caught upon her nest at Whittlesea in Huntingdonshire. Mr. Cordeaux states that it has been met with two or three times during the last ten years on the coast of Lincolnshire towards the end of March. Macgillivray said he had several times found examples in the south of Scotland, and Mr. Gray observed one, which was afterwards shot and examined by him, at Dunbar in the winter of 1847. Saxby also saw a pair at Lerwick in 1854. In Ireland Thompson believed it had been observed by Dr. Ball in June, 1846, and Mr. R. Warren, junior, killed one on the island of Bartra in Killala Bay, 25th April, 1851. Many other instances of its occurrence or capture in various parts of the United Kingdom have been recorded, in some of which it is quite possible that the observers have been mistaken, but enough has been said on this point. One remarkable fact however should be stated, which is that the bird does not appear to have been noticed either in Suffolk or Norfolk.

This Wagtail has a far wider range than the preceding. Prof. Reinhardt says that a specimen was sent from South Greenland in 1849.* It is a common summer-bird in Iceland and the Færoes, and is found over the whole of Europe from the North Cape to the shores of the Mediterranean, crossing that sea into Africa, where it has been found, it is said, so far south on the west coast as Senegal and on the east as Zanzibar, but some doubt may be entertained on these points. It also occurs in Palestine and Asia Minor, but its limits to the eastward* are as yet beyond the Editor's power of definition, since he cannot now determine what value should be attached to the differences presented, or said to be presented, by numerous allied forms which have been described under a multitude of names as distinct species.

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* The "*Motacilla alba*" said (Ibis, 1860, p. 166) to have been observed at Godhavn during the ever-memorable voyage of 'The Fox' was a Wheatear (*Saxicola œnanthe*), as the Editor was able to satisfy himself.

In general habits, such as food, haunts and so forth, both forms of black-and-white Wagtail which occur in Britain are almost exactly alike. It has been said indeed that the White Wagtail does not follow the plough as our Pied Wagtail so commonly does, and if that be the case the fact might denote some difference in the choice of food; but, so far as the Editor's acquaintance with the two birds extends, he cannot observe any distinction in this respect, while, if such really exist, it may perhaps be explained by the consideration that the White Wagtails which accidentally visit these islands are most likely natives of Iceland or other northern countries, where arable land is scarcer than with us, and consequently have not learnt by inherited instinct the advantages offered by our mode of tillage. Several observers, however, have remarked a difference in the call-note of the two birds, a fact noticed by Vieillot, one of the first describers of *M. lugubris,* who said that it could be easily distinguished by its cry from *M. alba.* The Editor has never listened to the two birds at the same time or even within a very few days of one another, so that his evidence is not decisive on this point, but he is inclined to agree in the truth of the observation, though he must add that to the best of his belief the call-notes and songs of some other species—as the Wheatear and the Redstart—differ with the country in which they are heard. The White Wagtail generally builds its nest in just the same places and in the same style as does the Pied Wagtail, but the former has been known (Journ. für Orn. 1864, p. 41) to choose the burrow of a Sand-Martin as its nursery, a fancy which does not seem to have struck the latter. The eggs of each are precisely similar in size and colour.

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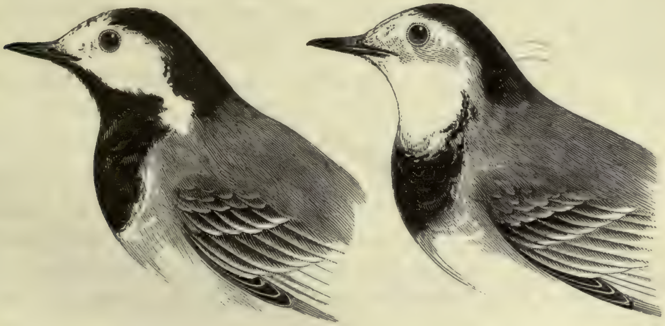
* Mr. Blanford believes he obtained it in Beloochistan.

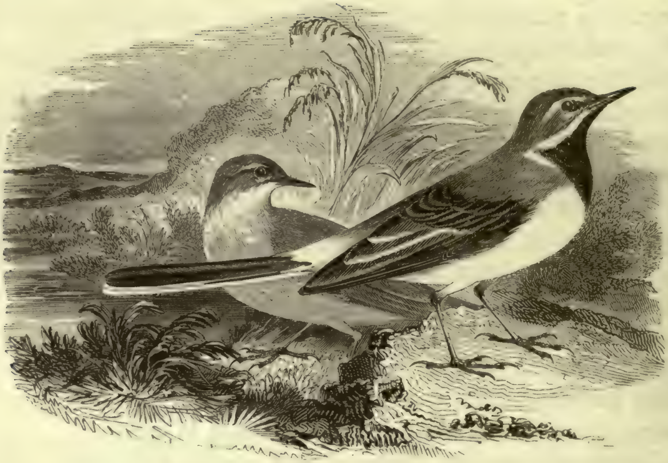
In the adult male in summer the bill is black: the front and sides of the head white, extending over the eyes, and forming a patch on the sides of the neck; crown and back of the head and nape, black; back, scapulars, rump and upper tail-coverts, pearl-grey or very light ash-grey; primaries, secondaries, tertials and wing-coverts brownish-black, with broad outer margins of greyish-white; the two middle tail-feathers black bordered with white; the two outer tail-feathers, on each side, white, with a black edge on the inner web; the remaining three pairs, black; the chin and throat black; breast, belly and lower tail-coverts, white: legs, toes and claws black.

The whole length is about seven inches and three-eighths; from the carpal joint to the end of the wing rather more than three inches: and it has been asserted that this bird generally appears rather smaller than the Pied Wagtail.

The female has the forehead and cheeks dull white; the throat is more or less mottled with white, the black on the occiput covers less space, the back is tinged with olive, the edges of the wing-coverts incline to a greyish-white, and the black everywhere is less pure.

The vignette below represents the male White Wagtail in summer and winter—and renders a description of the plumage in the latter season unnecessary, the white chin and upper part of the throat being the principal difference.





MOTACILLA SULPHUREA, Bechstein[*].

THE GREY WAGTAIL.

Motacilla boarula[†].

The habits of this bird are in some respects similar to those of the two preceding; but, as a rule, it has very different haunts, and, except during autumn and winter, is seldom found in such places as are frequented by the Pied Wagtail, affecting in spring and summer more secluded spots and especially the neighbourhood of clear, rocky or gravelly watercourses. Its partiality for localities of this kind renders its distribution throughout the kingdom, as will presently be more fully set forth, not unlike that of the Dipper, and on the whole it may be said to be only an autumnal or winter-visitor to the eastern and most of the southern counties of England, not habitually breeding in the former and only in the more westerly of the latter. It is nowhere a very abundant species and is far more shy and local than the other Wagtails. Like those of our common Pied bird its movements have been frequently misunderstood and misrepresented, but this fact is in some degree excusable since they vary unaccountably as regards places even within a short distance of each other. It has been declared to be in a general way a summer-visitant to the more northern counties, migrating in autumn to become a winter-visitant in those of the south; but the fact is incontestable that, in many places both in the north and in the south, it is, as a species, permanently resident, though probably, as already explained in the case of the Pied Wagtail, a regular migrant, as an individual; and the greater number of young birds no doubt leave this country altogether in autumn—few ever returning. Except the Dipper, it is perhaps the most aquatic of all the species of its Order, being rarely seen, unless on its migrations, far from streams, and comparatively seldom even in moist meadows without running water be near. It is also somewhat solitary in its habits—not more than a pair or at most a family-party being found in company. Active and restless, it is incessantly on the move, flitting with graceful undulations from place to place on the brook-side, running with rapid steps along the stony margin or wading in the shallows as it seeks its food, which consists chiefly of various insects, and in pursuit of some of them it will spring into the air, while for others, probably water-beetles of the genera *Dyticus* and *Gyrinus*, it will alight on the precarious footing afforded by half-submerged water-weeds if such there be. Small freshwater-mollusks, especially *Cyclas cornea*, also form part of its diet, and examples examined by Thompson contained many specimens of *Ancylus fluviatilis* and one of *Limnæus fossarius*. Its note is louder and sharper than that of the Pied Wagtail, though quite as cheerful, but so far as is known the male is no songster. When on passage it may be seen nearer the habitations of men, and will even enter large towns and chase flies over the roofs of the houses.

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[*] Gemeinnützige Naturgeschichte Deutschlands. Ed. 2, iii. p. 459 (1807).

[†] Not *Motacilla boarula*, Scopoli (1769).

The nest of this bird is seldom placed very far from the stream it frequents, and generally in some rugged part of the bank, the inequalities of which afford concealment; but other sites are sometimes chosen, for Mr. Weir mentions one built on a shelf in a room, which the bird entered through a broken window, and Mr. Cecil Smith has found one in a rough stone wall—both nests being some way from water. The structure is similiar to that of the Pied Wagtail, being formed of fibrous roots, dry grass and moss, lined with wool, hair or feathers. The eggs are from five to six in number, french-white, closely mottled, suffused or clouded with very pale brown or olive, varying in depth of tint, and also in the extent of ground shewn between the markings: they measure from ·79 to ·72 by from ·57 to ·53 in. Selby observed that two broods are produced in the season, the first of which is generally fledged by the end of May, and the second, according to Macgillivray, is abroad in July. The young, till late in autumn, may be frequently seen in company with their parents.

A line drawn across England from the Start Point, slightly curving to round the Derbyshire hills, and ending at the mouth of the Tees, will, it is believed, mark off the habitual breeding-range of this species in the United Kingdom: for southward and eastward of such a line it never or only occasionally breeds, while to the westward and northward its nest may be looked for in any place suited to its predilections, as above described, whether in this island or in Ireland, where, according to Thompson, it is extensively though not universally distributed. In Scotland, says Macgillivray, it is rare to the north of Inverness, but it is an occasional summer-visitor to Orkney, and in Shetland it occurs towards the end of summer, though it is not known to have been met with in the Outer Hebrides. In the south-west of England its numbers are in summer comparatively small, but it breeds annually in Cornwall and on Dartmoor, and as we pass northward its numbers increase, until in parts of Scotland perhaps they attain their maximum. Nests have been reported from Dorset, Wilts, Hampshire, Sussex and even Kent, but in those counties they are confessedly casual and only in the case at Chenies, in Buckinghamshire, mentioned by Mr. Gould (Contr. Orn. 1849, p. 137), does the species seem to have been more than an accidental settler.

The Grey Wagtail does not visit Iceland, the Færoes or Norway. It has been observed in Heligoland, and a single example is said by Prof. Nilsson to have been shot in the extreme south of Sweden, 4th December, 1843. Its most northern occurrence in Germany, near Kiel, was recorded by F. Boie more than forty years ago, and in that country it is chiefly confined to the mountainous districts which only exist in the central and southern parts. It is however also said to have occurred once in Posen. Thence it is found on the Carpathians and so through to Turkey, where it is met with at all seasons of the year, and the Editor has received from Mr. Robson its nest and eggs taken on the Asiatic side of the Bosphorus. It visits Greece in autumn and passes the winter in the Cyclades. It is also common at the same season in Palestine. De Filippi records it from Delidian and near Elburz, but its presence so far to the eastward is open to doubt, because, according to some ornithologists, its place is here taken by the *Motacilla melanope* of Pallas, a very nearly allied form, but with a constantly shorter tail. Should the two birds be deemed identical, then the range assigned to the species must be enormously extended,* for it is found not only on the Ingoda and at Jeniseisk, but also in Ladak, South-eastern Siberia, Japan, China, Formosa, Hainan, Java and Sumatra, besides breeding, according to Mr. Hume, in Cashmere, and being a constant winter-visitor to various parts of India. Leaving this point undecided, there seems to be no doubt, however, as to the species which is a bird of double passage through Arabia and Egypt being the same as our own, and it goes as far south in eastern Africa as Abyssinia, wintering in the central highlands of that country, but, according to Dr. A. E. Brehm, resident at Mensa. Turning westward the statement of Loche that it breeds in Algeria is unsupported by later inquirers, but as Mr. Wright has noticed that it arrives in Malta in autumn and is then common there, while he adds that a few remain till March (some even stopping to breed), it may be reasonably supposed that the greater number migrate to North Africa for the winter, and indeed Mr. J. H. Gurney, junior, believes that he saw it at Oran. Many persons, the Editor among them, have observed it in Madeira, and Mr. Godman says that it is also very common and resident in the Canaries and Azores.* Throughout the other countries of southern and western Europe not above named it is also found in suitable localities.

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* This is not the only result of such an identification. If the two birds are not specifically distinct, the name *M. melanope*, conferred by Pallas in 1776 (Reise u. s. w. iii. p. 696) on the eastern form, takes precedence of Bechstein's *M. sulphurea*. The Editor has not been able to detect any other difference than that noticed above between eastern and western specimens, and relies on the opinion of Mr. Swinhoe (Proc. Zool. Soc. 1871, pp. 364, 365), backed by that of Lord Walden, for not adhering to the old belief of their specific identity.

In summer the bill of the male is dusky brown ; the edges of both mandibles light brown ; irides dark hazel : crown of the head and the ear-coverts slate-grey, with a narrow white streak above the eye and ear-coverts, bounding the lore, which is black, above, and a second shorter white streak beneath the lore ; neck, scapulars, back and rump, slate-grey ; wing-coverts and quills almost black, the former tipped with buffy-white ; the tertials with white edges, and white on a large portion of the inner web ; upper tail-coverts greenish-yellow ; the outside tail-feather on each side white ; the second and third on each side also white, with a narrow black line on the outer web ; the six middle tail-feathers black, with yellowish edges at the base ; the chin and throat black, the latter bounded by a white line ; breast, belly and lower tail-coverts, bright king's yellow : legs, toes and claws, pale brown.

The whole length of the bird is seven inches and three-quarters, of which the tail-feathers measure nearly half. From the carpal joint to the end of the quill-feathers, three inches : the second and third primaries nearly equal, but the third the longest in the wing.

In winter the chin and throat are dirty white, the breast and superciliary streak dull buff, the belly greyish-white, tinged with yellow.

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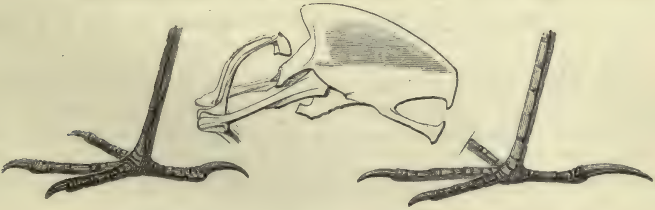
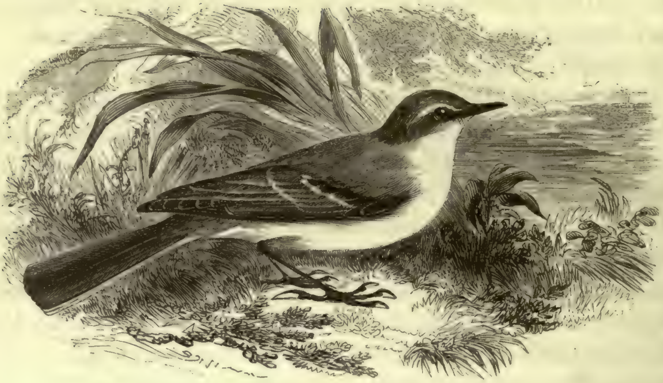
* Azorean specimens are said to have shorter tails than British examples, in this respect resembling the Eastern *M. melanope.*

The colours of the female are at all seasons paler than those of the male; and the young bird of the year, like the adult female in winter, wants the buff breast of the male at that season.

The genus *Motacilla*, which, as originally founded by Linnæus, contained nearly all the "Soft-billed" birds of early English ornithologists, was restricted by various authors in succession until none but the Wagtails remained in it. In 1817, Cuvier further divided it, establishing a genus *Budytes* (of which the bird next to be described is the type) for the Wagtails having a long hind claw, and also distinguished by the prevalence of yellow in their plumage, while he left only the black-and-white Wagtails in the genus *Motacilla*. This, in the opinion of some systematists, did not sufficiently provide for the present species, which is in some respects intermediate between the two groups, and accordingly Kaup, in 1829, proposed generic distinction for it under the name of *Calobates*—a step which has been followed by many authors. British writers have commonly applied the specific name of *boarula* to the Grey Wagtail, but they have done so erroneously. The *M. boarula* of Scopoli, who first of binomial nomenclaturists used that name, is undoubtedly the *M. flava* of Linnæus, and hence it is necessary to adopt for the Grey Wagtail Bechstein's name of *M. sulphurea*. The *M. flava* of Scopoli is the present bird, and the *M. boarula* of Linnæus is also the young of his *M. flava*.

The vignette represents on the left the foot and breastbone of the Pied Wagtail, and on the right the foot of our common Yellow Wagtail, belonging to the section of the genus which possesses an elongated hind claw.





MOTACILLA FLAVA, Linnæus*.

THE BLUE-HEADED WAGTAIL.

Motacilla flava.

SINCE Mr. Gould, in July, 1832, pointed out the distinction between the common Yellow Wagtail of this country and that which inhabits the nearest parts of the continent, the latter has been not unfrequently observed in the United Kingdom; it is therefore fully entitled to consideration in any work on British Ornithology. Mr. Gould then very clearly shewed (Proc. Zool. Soc. 1832, p. 129), what had never been even suspected before, that the *Motacilla flava* of all prior British writers was not only distinguishable from the bird so called on the continent, but that our Yellow Wagtail was almost as rare, and as little known abroad, as was the foreign Yellow Wagtail† here. Later experience has but little, if at all, affected the position taken up by Mr. Gould, for, though the Blue-headed Wagtail (to use the first

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[*] Syst. Nat. Ed. 12, i. p. 331 (1766).

[†] When this bird was first recognized by Mr. Gould, he called it *M. neglecta*, supposing it to have been overlooked by other naturalists, and continued the name *M. flava* to the British form. On its subsequently becoming clear that the former was the true *M. flava* of Linnæus, it was necessary to adopt a new name for the latter, and that of *M. raii* is now applied to it as will presently appear more fully.

distinctive English name applied to it) is now believed to be of almost annual occurrence and even to have bred in this country, and our Yellow Wagtail has been observed in many parts of Western Europe, it cannot be gainsaid that each has in the main a separate if not a very well-defined range. Moreover, so far as the Editor knows, no examples sufficiently intermediate between the two birds to give rise to any doubt in referring them to either have been found, and accordingly the recognition of each seems to be as much required as that of the two black-and-white Wagtails already described. But it is to be observed that besides a very distinct species, the *M. citreola* of Pallas, Europe is inhabited by at least four forms of Yellow Wagtail, which some authors regard as so many good species, while other writers consider them subspecies, races or local varieties. The first of these, the common Yellow Wagtail of this country, *M. raii,* will immediately be treated of at length. The second is the subject of the present article, the Blue-headed Wagtail—undoubtedly the *M. flava* of Linnæus* and the *M. neglecta* of Mr. Gould, which, except *M. raii,* has the most westerly range, and the cock in breeding-plumage has a bluish-grey crown and ear-coverts, with white eyebrows. The third is the *M. cinereicapilla,* long ago described by Savi as having a dark grey crown, black ear-coverts and no white superciliary streak. The fourth is that which is commonly called *M. melanocephala,*† with or without a superciliary streak of yellow or white, but having an intensely black head. But between these last three, examples are said to be found so intermediate that it is almost impossible to determine to which they belong,‡ and the difference between some of them is simply one of shade. Both the birds last named are perhaps of more limited range than the typical *M. flava*—though this cannot at present be asserted confidently, but towards the north of Europe the breeding grounds of all three converge and almost inosculate. *M. flava* it is true seems there to be confined to the lower lands of Norway and Sweden, while *M. cinereicapilla* is the tenant of the subalpine and arctic districts, but Mr. Gould has what is to all appearance *M. melanocephala*, shot by himself on the Dovre Fjeld, and it is possibly this last which is the prevalent phase in Russia and the countries of eastern Europe so far as Dalmatia, only accidentally occurring to the westward, as at Malta, whence Mr. Dresser has received it from Mr. Wright. Both *M. cinereicapilla* and *M. melanocephala* in winter resort to Egypt, where the typical *M. flava* seems to be less common. This last Canon Tristram on his third expedition obtained in Palestine: it must, however, be deemed questionable whether it goes further eastward, since examples from India, the Malay Archipelago, the Sea of Ochotsk and even Alaska, though almost exactly like specimens from central and western Europe are said to present certain minute differences and are accordingly believed by some ornithologists to be distinct. In this unsatisfactory condition must the subject be left here.*

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* In his full description of the adult male of this bird (Faun. Svec. Ed. 2, p. 92) Linnæus expressly mentions its characteristic "lineola supra oculos alba."

† This name was first given to a Wagtail by Lichtenstein, but it is perhaps questionable whether it should be allowed to stand, since there is a very different bird, one of the Warblers, which was long before called *M. melanocephala* by J. F. Gmelin; and there are some authorities who consider the true *M. melanocephala* of Lichtenstein even to be distinct from the European bird usually so termed, naming this last *M. nigricapilla.*

‡ Such an example shot some years ago near Penzance, and now in Mr. Rodd's

The first British specimen of this bird, a fine adult male, was shot at Walton-on-the-Naze, October 3rd, 1834, by Mr. Henry Doubleday, and recorded by him the following year (Mag. Nat. Hist. iii. p. 617). There were two birds together, and his attention was drawn to them by observing a pair so late in the season, and so long after our common Yellow

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collection, has been figured by Mr. Gould (B. Gr. Br. part xxii.) under the name of "Grey-capped Wagtail" and referred to *M. cinereicapilla*, from the typical appearance of which it differs by possessing a short white superciliary streak behind the ear only.

* It seems to be certain that the representatives of all these forms, if not the forms themselves, occur in India. Should the European *M. cinereicapilla* be identified with the Indian *M. viridis*, and the Editor is unable yet to see any difference between them, the latter name, as the oldest, will have to be adopted by those who yet think that it should be kept distinct from *M. flava*.

Wagtail leaves this country. At a meeting of the Wernerian Society of Edinburgh, January 9th, 1836, Sir Patrick Walker read a notice of the occurrence of an example on the banks of the Water of Leith (Mag. Zool. Bot. i. p. 111); and about the same time another example is said to have been met with near Edinburgh (*loc. cit.*). Mr. Albany Hancock records the fact (*tom. cit.* p. 491) that on May 1st, 1836, a male specimen was shot a little to the westward of Newcastle-on-Tyne, which was at the time accompanied by a second, most likely its mate; and on the following day Hoy killed an adult male at Stoke-Nayland in Suffolk (*tom. cit.* p. 200). The fine male now, by the kindness of Mr. Joseph Clark, figured was taken in April, 1837, near Finsbury.

In all not far from forty examples have been on good authority recorded as observed in this country since Mr. Gould's discovery, and most of them were obtained, while doubtless many others are unrecorded. They have generally occurred on or near the coast of the south-western, southern or eastern counties, Cornwall, Devon, Somerset, Sussex, Kent, Essex, Suffolk and Norfolk, mostly in the months of April, May or June, and several times in pairs. At Lowestoft, in April, 1854, according to Mr. Gurney (Zool. p. 4440), four males and two females were killed in three days out of a flock of the Yellow Wagtail, but on hardly any other occasion has more than a pair been observed together in this country. Mr. J. Watson states (Zool. s.s. pp. 2343, 2406) that two or three pairs were noticed from year to year near Gateshead, where two nests were found in 1869 and a third nest in 1870, when two young birds, one of which was determined by Mr. John Hancock, were shot. The Blue-headed Wagtail has also been again obtained in Scotland, for Mr. Gray mentions that an example, killed near Dunbar in 1868, is now in the possession of Mr. F. M. Balfour, and Saxby has several times seen it late in autumn in Shetland. It was not known to Thompson as a bird of Ireland, but the Editor is informed of its occurrence in that country by Mr. Blake Knox, who thinks it is much overlooked in the south.

On the western half of the continent this bird is a common summer-visitant, though some few may remain to winter in the countries bordering on the Mediterranean. It has been obtained in the Færoes, but, as before stated, it does not go very far to the northward in Scandinavia, and in Europe no definite line can be drawn, even if such a boundary exists, to the eastward of which its place is taken by *M. cinereicapilla.* It may be said to extend over the whole of Africa, having been obtained both in Damaraland and in the Transvaal territory, while it is common in Morocco and Algeria, and, as has already been mentioned, it is found in Egypt. In whatever part of the world it occurs it generally frequents the vicinity of water or at least of moist places, its habits being precisely those of our own Yellow Wagtail, though when the two are seen together observers say that the Blue-headed birds are distinguishable by their more slender form.

This bird makes its nest on the ground in holes, sometimes among exposed roots of trees, in corn-fields and meadows, laying about six eggs, which measure from ·8 to ·66 by from ·57 to ·48 in., and are of a french-white, closely mottled or suffused with pale brown or olive—the former sometimes inclining to light red, the latter often verging upon green; and dark hair-lines are also not unfrequently present. The food of this bird consists of small green caterpillars, moths, aquatic insects, and especially flies and gnats.

The adult male, in the breeding-season, has the bill black; the irides dusky brown: the top of the head, the lores, ear-coverts and nape, bluish-grey; over the eye and ear-coverts on each side a distinct white streak of variable length, with a shorter white line immediately below the eye; the scapulars, back and upper tail-coverts, greenish-olive, tinged with yellow; wing-coverts and quills dark brown—the former, as well as the tertials, edged with yellowish-white; the two outer pairs of tail-feathers, white, with a black border on the inner web for more than three-fourths of their length, that of the second feather being broader than that of the first; the third pair black, with a narrow outer edge of white; the three middle pairs nearly uniform black; the chin and sides of the face beneath the ear-coverts, white; the throat, breast, belly and lower tail-coverts, bright gamboge-yellow: legs, toes and claws, black.

The old male in autumn loses much of the yellow tinge on the back, and the body beneath is of a primrose-yellow.

The length of the male is six inches and a half. From the carpal joint to the end of the wing, three inches and one-eighth: the second primary rather longer than the third or fourth, and, when the wing is folded, just surpassing the longest tertial.

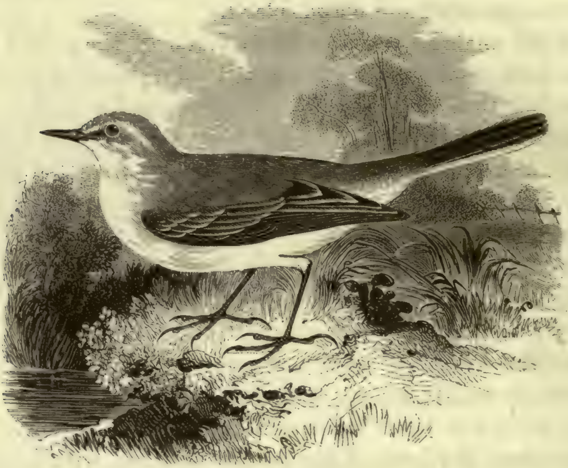
The whole length of an adult female is six inches and one-eighth. In the breeding-season the head, ear-coverts and nape are slate-grey; over the eye and ear-coverts a white streak; the back dull olive; the edges of the wing-coverts and tertials nearly white; the chin and throat white; the breast, belly and lower tail-coverts pale king's-yellow.

In autumn the head of the female is mixed with greenish-brown, the white superciliary streak remaining; the chin white; throat and breast buffy-white; belly and lower tail-coverts primrose-yellow.

The young male in his first autumn resembles the adult female in the breeding-season, except that the grey of the head is more mixed with brown, and the yellow of the upper part of the breast is clouded with brown and buffy-orange. In the following spring the grey feathers of the head still exhibit a slight mixture of olive-green, and the chin is yellow, which in the more adult male is white.

The young female in spring has the head and ear-coverts greyish-brown; the chin and throat buffy-white; the upper part of the breast mottled with brown; the lower part of the breast and the body beneath, primrose-yellow, enriched with a mixture of king's-yellow.

This bird may be distinguished from our common Yellow Wagtail, next to be described, by the white streak over the eyes and ear-coverts, which, though variable in length, appears to be permanent at all seasons, and by the bluish-grey head, which is more or less conspicuous, also, at all seasons, but particularly in summer.



MOTACILLA RAII (Bonaparte*).

THE YELLOW WAGTAIL.

Motacilla Rayi.

THE common Yellow Wagtail of the British Islands is a regular summer-visitor to this country, making its appearance about the end of March, or the beginning of April, and leaving our southern shores in September almost to a bird. In the rest of its habits it is very like our other common Wagtails, but it is more given to perching on trees or bushes, and seldom or never resorts to the haunts of men or the close proximity of houses and gardens to seek a breeding-place as does the Pied Wagtail, nor is it so constantly an abider by the water-side as the Grey Wagtail. It often frequents arable land, and inhabits fields of beans, pease and tares, in all of which its nest has been found; it also frequents, especially on its first arrival in this country, downs and sheep-pastures, fields of sprouting corn, and even dry fallows, where, perched on a clod of earth or a stone, it may be seen flirting and fanning its tail, and exhibiting its bright yellow breast to the greatest advantage. Its appearance at the time of sowing spring-corn always attracts the notice of countrymen, and has gained it in many districts the name of Barley-bird or Oatseed-bird. Later in the season it betakes itself rather to the neighbourhood of water, or at least to pastures and grass-lands, which may be regarded as its proper haunts at this period of its life, and here it is as often found on the richest as on the poorest soils*. The nest is placed on the ground, usually sheltered and more or less concealed by herbage, and varies somewhat in structure, being sometimes formed of dried bents and fibrous roots, lined with hair, while Mr. Hewitson mentions that of two nests found on the same day and within a few yards of each other, one was composed of green moss and grass, lined with rabbits' down, but the other entirely of grass and lined with fine roots. The eggs are from four to six in number, and are not to be distinguished from those of the Blue-headed Wagtail by size or colour. A second nest is frequently if not generally built as summer advances.

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* *Budytes rayi*, Bonaparte, Comp. List. B. Eur. and N. Am. p. 18 (1838).

The young of the first brood are able to fly about the end of May, and betake themselves to the neighbouring pastures. When afterwards joined by their later-hatched brethren all may be seen up to the period of their autumnal departure accompanying their parents in search of food. They are especially fond of attending cattle and sheep while grazing, actively and gracefully running just in front of the beast's head or between its legs, catching the flies and other insects that are disturbed by its progress as it feeds or attracted to it when lying down. These are quickly seized by the birds and sometimes every animal of a large herd or flock will be escorted by from one to half-a-dozen of these little attendants, ever on the watch for a passing insect, and at once administering to the comfort of the larger being while satisfying their own wants.

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* On the left bank of the Little Ouze, below Thetford, several pairs of this bird used to choose for their breeding-quarters some heathery mounds bordering a stretch of wet meadows, and there associated so as to form, as it were, a little colony, three, four or more nests might be found within the compass of a few yards. This was no doubt originally owing to the spot affording greater security from floods than any other near, and to it would seem to have resorted the whole population of Yellow Wagtails frequenting a considerable extent of the valley of the river. The mounds are of blown sand, based on a terrace of gravel, which latter, having been largely excavated within the last ten years, has produced many flint-implements of a very ancient type. It is perhaps not too much to suppose that the colony may have first established itself in days not long after the Palæolithic period.

The call of this bird is more shrill than that of the Pied Wagtail, but less so than that of the Grey species, and consists of two notes repeated in succession, the second of which, in the musical scale, is a whole tone lower than the first. The song of the cock is lively but short and not often uttered.

The Yellow Wagtail is pretty numerous during summer and, with the exception of Cornwall and Devon, is found in suitable places throughout England, as well as in Wales and Scotland so far as Forfarshire on the east and Dumbartonshire on the west. Further north it becomes scarcer though it breeds in the counties of Inverness and Aberdeen. It has been also seen in Sutherland and has several times occurred in Orkney. In Ireland it is generally a rare species, and curiously enough except about Lough Neagh, does not seem to be more than a stray visitor, for it is doubtful whether it breeds elsewhere in the country. In the south, middle and west of the island, indeed, there is no record of its appearance. After the breeding-season is over this bird collects in flocks often of considerable size and then, on its passage southward, frequently shews itself in places not at other times visited by it. These flocks do not seem to drift eastward along the south coast of England as is the rule with the main body of our departing emigrants, but strike their outward course at once, leaving this country from the shores of Cornwall and Devon, as observed by Montagu seventy years ago, equally with those of Sussex or Kent; and Mr. Blyth mentions having noticed a small flock, early one morning in September, upon the sands in Jersey, which had apparently not long alighted from across the Channel, and had probably taken their departure from some part of the west of England.

The geographical range of this bird is less limited than was at one time thought. It has occurred in Heligoland. It is said to breed in great numbers near Dieppe where *Motacilla flava* is only seen on passage, and also, but less plentifully, near Lille, where *M. flava* is common. In the south of France it only appears, say MM. Jaubert and Barthélmy-Lapommeraye, in autumn. It also occurs in Spain and Portugal. It winters in Africa where its wanderings are extensive, since Mr. Gurney has lately received it from the Transvaal territory, and it has been often sent from the Gambia and other localities on the west coast. As to its eastern limits nothing positive can at present be asserted, but Drs. Finsch and Hartlaub say they have seen it from Astrakan, and refer specimens from still more distant places, as Tibet and even Formosa, to this form.

I am indebted to Mr. Henry Doubleday, for the finest specimen of this bird I ever saw, an adult male in brilliant summer-plumage. The bill is black: the irides hazel: the top of the head*, the lores, ear-coverts, nape, scapulars and back, very pale olive, rather darkest on the back; over the eye and ear-coverts on each side a streak of brilliant gamboge-yellow; wing-coverts and quills dusky brown, the former tipped, the tertials edged and tipped, with yellowish-white; upper tail-coverts olive; the two outer pairs of tail-feathers white, with a streak of black on the inner web, all the others brownish-black; the chin, throat, breast and all the lower surface of the body, a bright, rich gamboge-yellow: legs, toes and claws, black.

The whole length of the bird is six inches and a half. From the carpal joint to the end of the wing, three inches and one-eighth: the first three primaries very nearly equal, but the first rather the longest.

The plumage of the female at the same time of year is much less rich in colour, the back being tinged with darker brown, and the lower surface of the body of a less brilliant yellow. Young birds of the year, and the parents after the moult, which immediately succeeds the breeding-season, resemble each other considerably; the olivaceous band observed in some across the breast, is, possibly, a sign of youth, and probably remains till the first spring change.

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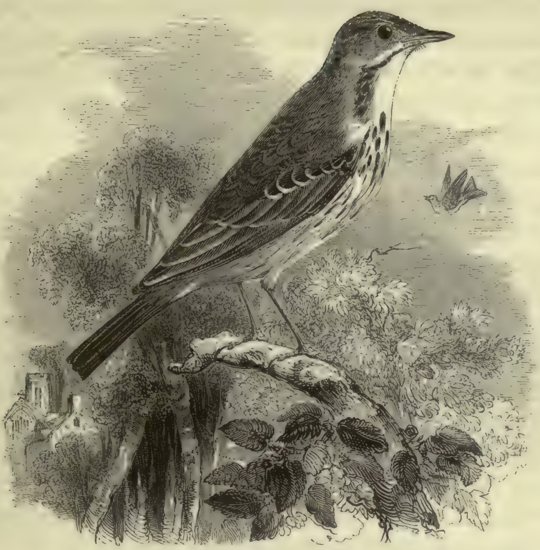
* Occasionally a cock bird in breeding-plumage will be found with the head as yellow as the lower parts of the body, but in such examples the yellow is generally paler than in those which have the top of the head olive-coloured.

Having frequently examined specimens of our Wagtails in the spring of the year, when they were assuming either the change of colour, or the additional brilliancy of tint, peculiar to the breeding-season, without finding any new feathers in progress, I am induced to consider the vernal change in these birds as so many instances of alteration effected in the colour of the old feathers, and not a change of the feathers themselves; but, as has been stated before (page 547), this opinion must be considered to be still open to doubt.

As regards the trivial name to be properly applied to this bird authorities have differed much. In 1834, Blyth (Mag. Nat. Hist. vii. p. 342) suggested that *Budytes flavissima* was better than *B. flava* (as in those days it was called), but not in such a way as to allow the former to be adopted. In 1835, an anonymous writer cited it (Analyst, iii. p. 31) as *B. verna,* Cuv.; but Cuvier is not known to have bestowed any such name upon it, and if he had we may be sure that he did not discriminate between it and the true *Motacilla flava,* of which therefore *B. verna* would be a synonym, while an author who does not give his own name is not justified in giving one to what he deems a species. In 1840, Temminck described it (Man. d'Orn. iii. p. 183) as *M. flaveola,* Gould, an assumption just as gross; for Mr. Gould never so called it, while Pallas years before (Zoogr. Ross.-As. i. p. 501) had a *M. flaveola* which is certainly not the present bird, any more than is his *M. campestris*—though this last has been supposed by some to be our Yellow Wagtail. It accordingly follows that Bonaparte's *Motacilla* or *Budytes raii*—that being the ancient way of spelling this last word, is the name which should be used.



ANTHUS TRIVIALIS (Linnæus*).

THE TREE-PIPIT.

Anthus arboreus†.

ANTHUS, *Bechstein* ‡.—Bill slender, subulate, nearly straight, very slightly notched at the tip; the mandibles nearly equal in length and their edges slightly compressed inwards. Nostrils basal, lateral, oval and partly concealed by a membrane. Wings moderate, the first primary acuminate and nearly abortive, the second, third and fourth nearly equal, and one of them the longest; fifth in some species almost as long; secondaries short, the tertials very long, the longest about equal to the fifth primary or occasionally longer than any. Tail of twelve feathers, moderate and slightly forked. Tarsus scutellated in front, about as long as the middle toe, which is joined to the outer toe at its base; toes rather long; claws moderate, except that of the hind toe which in some species is very much elongated.

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* *Alauda trivialis*, Linnæus, Syst. Nat. Ed. 12, i. p. 288 (1766).

† Bechstein, Gemeinnützige Naturgeschichte Deutschlands. Ed. 2, iii. p. 706 (1807).

‡ *Tom. cit.* p. 704.

Bechstein separated the Pipits or Titlarks from the true Larks, and proposed the generic term of *Anthus* for the former*. This division has been generally adopted, and the difference between the species of each group is easily seen: the Larks, as will be more fully stated presently, having the nostrils covered (with a few exceptions) by short feathers, and the back of the tarsus scutellated, while the Pipits have the latter entire and the former exposed. Otherwise there is a very great general resemblance in the appearance of the two groups. Structurally however the Pipits agree so closely with the Wagtails that there seems no good reason for retaining them in a distinct family, and therefore they are here referred to the *Motacillidæ*, in accordance with modern practice, though opposed to that followed in former editions of this work. The style of coloration however is always enough to distinguish between a Wagtail and a Pipit. Wagtails, Pipits and Larks agree in never hopping like most small birds, but walk or run when on the ground, advancing their feet by alternate steps. Pipits however are said to moult twice in the year, while Larks undergo that change only once.

The Tree-Pipit is a spring-visitor to this country, generally arriving between the beginning and the third week in April, —but Mr. H. T. Frere has recorded its occurrence in February, and, after passing the summer with us, collects in small flocks and departs in September or October, though Neville Wood once shot an example in November. It frequents enclosed and wooded districts, being far from uncommon in many places. The male has a loud and lively song, not at all unlike, as was long ago remarked, that of a Canary-bird, and perhaps more attractive from the manner in which it is given than from its actual quality. He sometimes sings while sitting on the top of a bush, or one of the upper branches of a tall tree, but most generally, starting from such a perch, he will be seen to ascend on quivering wings about as high again as the tree, then, steadying his wings, expanding his tail and letting his legs hang straight down, he descends slowly by a half-circle, singing the whole time, to the same branch, or to the top of some other tree near by, without ever alighting on the ground meanwhile; so constant is this habit with him, that if the observer does not approach too near to alarm him, the bird may be seen to perform this same evolution twenty times in half an hour, and it is most frequently witnessed during and after a warm May or June shower.

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* Ignorant of or ignoring Bechstein's generic name, Leach, in 1816, used *Spipola* in the same signification.

It is hard to say when English writers first distinguished this species from the next with which it was long confounded. Yet the credit seems due to Willughby's correspondent, Jessop of Sheffield, who, without being certain, suspected that they were distinct and concisely gave it a true diagnosis, namely its larger size, its less green colour, its paler legs and its shorter hind claws. Ray also in his translation of Willughby's work quotes from an English author, whom he does not name and the Editor has failed to identify, a correct description of the peculiar song-flight of the Tree-Pipit. But none of these writers went the length of declaring it to be distinct, while Pennant, in 1768, from a specimen sent him by Mr. Plymly, did so, calling it the Field-Lark. Yet after his time much confusion existed, and thorough investigation of the errors of various writers—some of whom most unaccountably mixed it up with the Grasshopper-Warbler, would, even if that were possible, certainly not repay the trouble, seeing that it was unmistakably described by Linnæus, evidently from his own observation, though his name for it has been most unfairly overlooked.

The nest is placed on the ground near woods or plantations, very frequently at the foot of a detached tree, and is sometimes sheltered by tufts of herbage on the grassy bank of a hedge, or under a low bush. It is built of moss, with fibrous roots and dry grass, lined with fine bents and a few hairs: the eggs are from four to six in number, and exhibit so much variation that a whole page of description would scarcely suffice to give a complete account of them. A series of threescore specimens not especially selected for the purpose may be separated into three or four groups—each of a certain type and each so much unlike the rest that it would seem to belong to a different species, though the eggs of the several nests generally resemble one another, as is the case among the eggs of most birds. What may perhaps be regarded as the normal type is a ground-colour of french-white so closely mottled or speckled with deep brown as almost to hide the ground. In many other eggs the ground seems to be yellowish-white and the markings, nearly as close as in the former, are of a rich reddish-brown. Then there is a type in which the whole egg is suffused with brownish-pink, so as to have a uniform appearance. A fourth type differs from the first described in having the markings of a dull but deep brownish-purple. Then we have a distinct style wherein the ground-colour, whether greenish-white or yellowish-white, pale brown or brownish-pink, is marked with bold blotches of dark brown or brownish-purple, having blurred edges, interspersed with well-defined spots or splashes of the same, and beneath them blotches of pale brownish-grey, dull lilac or olive. Some of these last recall the eggs of the Blackcap, already described, and are of great beauty. They measure from ·85 to ·77, by from ·64 to ·56 in. Two broods are usually reared in the course of the season, and the food of this species is insects and small worms.

The Tree-Pipit breeds in nearly all the wooded and cultivated districts of Great Britain as far as Inverness and Banff; but it is seldom found in any open, unenclosed country, and is thus comparatively rare in West Cornwall. It is also not very numerous in Wales, while its occurrence in Ireland has not been satisfactorily established. In the north of Scotland too its numbers seem to diminish, and in that country generally it is local, affecting only those parts which are congenial to its habits, though it occasionally extends its flight to Orkney.

Our Tree-Pipit is a summer-visitor also to the north of Europe. Herr Collett says it was common near Tromsö in June 1872, but it has not yet been observed further to the northward, and in Sweden and Finland it hardly reaches lat. 69°, though Wolley many times obtained its nest and eggs near Muonioniska. From thence southward it is diffused pretty generally over Europe, but still only as a summer-visitor, or a bird of double passage, and it does not even winter in Sicily, though a few seem to do so in Malta. It is common in North Africa, and it probably extends over the whole of that continent since Prof. Sundevall records one in Wahlberg's collection from Caffraria. In Asia its range is likewise very great, reaching even to China and Japan, and it is found all over India in the cold season*.

The bill is dark brown above, the base of the lower mandible pale yellow-brown : the irides hazel : the top of the head, the nape and back, dark brown, each feather edged with light clove-brown, which is often tinged with buff ; the lesser wing-coverts blackish-brown, edged and tipped with dull white ; the greater wing-coverts dark brown, edged with pale brown, the light-coloured ends of the two sets of coverts forming as many bars across the wing ; quill-feathers dark brown, the primaries and secondaries with a very narrow light border of an olive-green tinge, the tertials with a broad outer edge of pale brown ; upper tail-coverts nearly uniform clove-brown ; the tail-feathers clove-brown, the outer pair with nearly all the outer web, and the distal part of the inner web, dull greyish-white, the second pair with a small triangular patch of dull white at the end of the inner web, the next three pairs with a very narrow light outer margin, and the middle pair, which are barred indistinctly with a darker shade, more broadly edged with light brown ; the chin and throat buffy-white ; from the inferior angle of the lower mandible a dark brown streak passes backwards and downwards ; the sides of the neck, and the breast pale buff, with elongated spots of dark brown ; belly and lower tail-coverts dull white ; the flanks tinged with buff and streaked with dark brown; the legs, toes and claws, pale yellow-brown; the hind claws considerably curved, and shorter than the toe.

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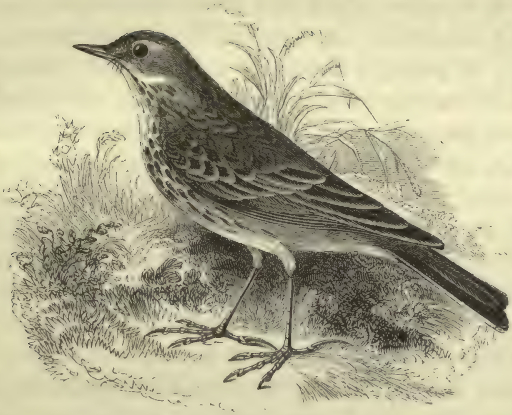
* Some of the Indian examples, when freshly moulted, are so highly coloured that they were long thought to be specifically distinct, and received the name of *Anthus agilis* from Sykes and of *A. maculatus* from Mr. Hodgson. Modern Indian ornithologists have regarded them as identical with our own bird, and in this view most European authorities are now inclined to agree.

The whole length is about six inches and a half. From the carpal joint to the end of the wing, three inches and three-eighths: the second, third and fourth primaries nearly equal in length, but the fifth is considerably shorter, and the longest tertial reaches as far as, or beyond the longest primary when the wing is closed.

The male is rather larger than the female and has the spots on the breast better defined; but the two sexes are nearly alike in plumage. At the autumnal moult, the bird acquires a greenish tint on the upper surface of the body, and an ochreous-yellow on the throat and breast. The young much resemble the adults at that season.

Scarcely any two British birds have been so frequently confounded together as this and that which is next to be described; but when the two are examined in hand, distinctions will be found that are sufficiently obvious and constant; and there are besides differences in the habits of these birds, as well as in the localities they each frequent. The Tree-Pipit is rather the larger bird of the two; the bill is stouter and stronger; the spots on the breast larger and fewer in number; the claw of the hind toe is not so long as the toe itself; in the wings the tertials are rather longer in proportion to the primaries; the white on the outer tail-feather on each side is neither so pure in colour, nor is it spread over so large a portion of the feather; and the Tree-Pipit walks slowly with somewhat of the gait of a gallinaceous bird, while the Meadow-Pipit runs quickly like a Wagtail.

The Tree-Pipit was rather needlessly made the type of a distinct genus, *Pipastes*, by Kaup, and it has been encumbered with a great many specific names. That given by Bechstein, *Anthus arboreus*, though most commonly used for it, can well be superseded, as it ought to be, by the older *A. trivialis*, as having led to confusion with the Woodlark, *Alauda arborea*.



ANTHUS PRATENSIS (Linnæus*).

THE MEADOW-PIPIT.

Anthus pratensis.

THE MEADOW-PIPIT, best known generally as the Titlark†—though it has many other local names, is the smallest and commonest species of the genus, and is found in the British Islands throughout the year. It chiefly frequents pastures, waste lands and the less cultivated districts, being equally at home on upland moors, low-lying marshes, and meadows be they wet or dry, so that there is scarcely a rural parish in the three kingdoms of which it is not an inhabitant. Observations fail to shew whether there is any elevation in Scotland at which it does not occur, but according to Thompson, it is in Ireland very common from meadows and bogs at the seaside to humid tracts on the highest mountains, while the same may certainly be said as regards England. In many of the northern parts of the country it is perhaps the most abundant of small birds, if indeed it be not the only one visible in the wilder and more desolate spots. Even in St. Kilda it may be seen, says Mr. Gray, round the huts of the lonely inhabitants, its notes during one time of the year being almost the only sound of the kind which breaks the monotony of their life, and, according to Saxby, it is now a common species in all parts of Shetland, though many persons believe it has but recently become plentiful there. Its haunts vary much with the season, for in winter it in a great measure leaves the bleaker and more barren situations, betaking itself to such places as afford better shelter and supplies of food, and especially to the sea-shore. Resident as a species, it is thus as an individual decidedly migrant, and to the eastern and southern counties of England it is a regular autumn-visitor, its flocks, which are often large, forming part of the advanced guard of the great emigrant host whose yearly departure from our coasts has been so well observed by Mr. Knox. Its return in spring has also been noticed by Mr. Cordeaux. When progressing from place to place, the flight of this bird is performed by short, undulatory jerks; but during the breeding-season, when in attendance on his mate and undisturbed, the cock rises in the air with an equal vibratory motion to the height of thirty feet or more, singing some soft, musical notes, and then, gliding down with wings and tail outspread and rigid, returns to the ground. Occasionally it may be seen to settle on a low bush or a rail, but it cannot be said to perch habitually on trees, as does the Tree-Pipit.

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* *Alauda pratensis*, Linnæus, Syst. Nat. Ed. 12, i. p. 287 (1766).

† This name is commonly applied according to the locality to whichever species of *Anthus* is there most abundant, so that it is really almost equivalent to Pipit. Among the local names of the present species, Titling, Moss-cheeper, Ling-bird, Teetick and (in Kerry, according to Thompson) Wekeen, may be mentioned.

The Meadow-Pipit, like others of the genus, seeks its food on the ground, along which it runs nimbly in pursuit of insects, worms and small slugs, occasionally mounting any elevation that may be near, such as a clod of earth or a stone, to look round, when it will stand for a few seconds, moving its tail up and down like a Wagtail, but less rapidly and violently, and then resume its occupation. The stomach of one, examined by Thompson in the month of December, contained two perfect specimens of the shell of *Bulimus lubricus*, and that of another was filled with oats and barley. Small seeds are frequently found to have been swallowed by it in winter, but the *larvæ* of insects appear to be its staple food. In confinement it is said to be a very voracious bird.

The nest is usually built on or in the ground, being placed at the side of a bank, in a depression or under the shelter of a tuft of grass : it is constructed externally of dried bents, lined with finer bents, fibres and hairs. The eggs of this species are subject to much variety, but not to the same wonderful extent as those of the preceding, and never seem to present the warm colouring so often found in those of the Tree-Pipit. The ground is french-white, but almost entirely hidden by a close mottling of brown or brownish-grey, both these colours varying very much in tint—in one direction becoming of a yellow-brown and in the other of a dull purple, while not unfrequently a decidedly green hue is perceptible. They are from four to six in number, and measure from ·83 to ·72, by from ·6 to ·53 in. There are commonly two broods in the course of the season, and the parents display great anxiety on behalf of their offspring, feigning lameness to divert the attention of intruders from the nest. Thompson mentions that a nest of this bird which was known to his friend, Mr. J. R. Garrett, was discovered by some boys, who pulled the grass away that concealed it. On visiting it the next day, he observed a quantity of withered grass laid regularly across ; and on removing this,—which, from its contrast in colour with the surrounding herbage, he considered must have been placed there as a mark by the boys,—the bird flew off. The following day, he found the grass similarly placed, and perceived a small aperture beneath it by which the bird took its departure, thus indicating that the screen, which harmonized so ill with the surrounding verdure, had been brought there by the bird itself*. The same gentleman once introduced the egg of a Hedge-Sparrow into a Meadow-Pipit's nest, containing two of its own eggs; but after a third egg was laid, the nest was abandoned. Whether the desertion in this instance was induced by the visits of the observer or by the introduction of the strange egg, differing so much in colour from those of the owner of the nest, cannot be determined, but it is certain that the egg of the Cuckow is very frequently deposited and hatched in the nest of the Meadow-Pipit, and the former bird can scarcely shew itself in the haunts of the latter without exciting its animosity and being followed by it with plaintive cries to a considerable distance.

The Meadow-Pipit is extremely abundant in the Færoes and is common also during summer in Iceland, while a single example is recorded by Dr. Paulsen from Greenland. It inhabits the whole of the European continent, taking a very high northern range, and breeding in some numbers on the wildest fells of Lapland; but there as well as throughout a great part of Central Europe it is strictly a summer-visitor, while in the south it resorts to the higher lands at that time of year, only appearing on the plains in winter or during its passage, in spring and autumn, from or to the coast of North Africa. In that quarter of the globe, however, it has never been found far to the south, and is of rare occurrence, says Capt. Shelley, in Egypt and Nubia. In Palestine, according to Canon Tristram, it occurs in small numbers in winter everywhere, and in favourable localities up to midsummer, so that it may probably be resident in that country. Further eastward, as Mr. Dresser remarks, its limits are not easily defined, but it is recorded from Trebizond and Tiflis. Lehmann obtained it on the mountains of Indersk and Mr. Blanford procured it at Persepolis. Mr. Gould long ago had seen it from Western India, and determined a specimen from Siam, while more lately Mr. Hume has obtained it at Ferozpoor; but nothing can be said positively as to its appearance in Central or Northern Asia, while in China and Japan it seems not to occur at all, the *Anthus pratensis japonicus* of Temminck and Schlegel being the perfectly distinct species, *A. cervinus* (Pallas)*.

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* This inference is perhaps open to doubt, but a similar circumstance, recorded by Blyth of the Skylark, as will presently be mentioned (page 617) renders it not unlikely.

The bill, which is more slender than that of the Tree-Pipit, is dark brown above, inclining to light yellow-brown at the base of the lower mandible : irides hazel : the top of the head, neck, back and upper tail-coverts, dark brown, each feather edged with light greyish-brown inclining to olive; both sets of wing-coverts edged with pale wood-brown ; quill-feathers brownish-black, the primaries and secondaries with a very narrow light border of an olive-green, the tertials with a broad outer edge of the same ; the tail-feathers dark brown, the outer pair with all the outer web and more than half the distal part of the inner web, white ; the second pair with a small triangular patch of white at the end of the inner web ; the next three pairs with a very narrow light outer margin, and the middle pair, which shew the trace of indistinct bars of a darker shade, more broadly edged with light olive-brown ; the chin and throat dull white ; ear-coverts mottled with two shades of greyish-brown ; from the inferior angle of the lower mandible a line of dark brown spots passes backwards and downwards; the sides of the neck and the breast dull white tinged with buff, with numerous elongated spots; belly and lower tail-coverts dull white tinged with brown, the flanks streaked with dark brown: legs, toes and claws, light brown; the hind claws slender, slightly curved, and as long as the toe.

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* This has been included as a British bird by Mr. Harting and Mr. Gould but on evidence which the Editor deems as yet insufficient. A skin of the species in Mr. Bond's possession, bought at the sale of the late Mr. Troughton's collection, bears a ticket indicating that it was obtained in Unst, 4th May, 1854, as it possibly may have been, but there is nothing to shew by whom it was procured or that it is not a foreign example to which the label has been tied. A second specimen, mentioned by the above-named writers as obtained in the Isle of Wight, which is also in Mr. Bond's possession, is not of this species, as that gentleman informed Mr. Dresser. Still the Red-throated Pipit is a bird whose migratory habits and wide north-eastern range make it very likely to occur in this country, and probably its recognition as an occasional visitor to the British Islands is only a matter of time and observation. It has been most perversely accounted a variety, or at most a local race, of *A. pratensis* by many authors, who have never had an opportunity of studying its habits or have overlooked the many peculiarities of each species—though these have been fully described by some observers. The account of *A. cervinus* given by Dr. Bree and Mr. Dresser in their respective works should remove all hesitation in future as to its specific distinctness, and the delicate apricot-colouring of the throat of the adult, more or less perceptible at all times of the year, should ensure its recognition when met with. In other respects it has much of the appearance of the Meadow-Pipit.

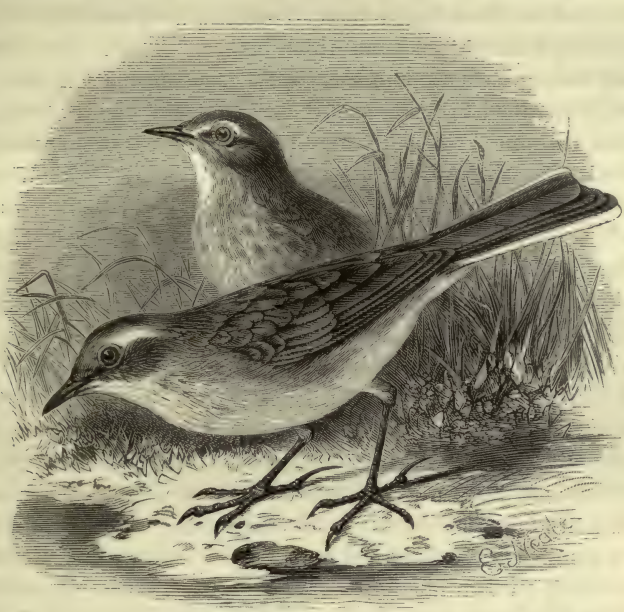
The plumage assumed at the autumnal moult has a rich tinge of olive mixed with the light brown above, and the lower surface is enlivened by an ochreous-yellow.

The whole length is about six inches. From the carpal joint to the end of the second and longest primary, three inches to three inches and one-eighth: the third, fourth and fifth primaries are nearly equal in length to the second.

Young birds have the olivaceous and yellow tints similar to those of the parents in autumn.

This species was removed by Kaup from the genus *Anthus* and placed in one which he named *Leimoniptera*, or to spell the word correctly *Limonoptera*. That eccentric systematist left only the bird next to be described and the Tawny Pipit in the genus *Anthus*.

Though Pipits are known to vary much in size, the extreme case of a specimen obtained near Brighton and recorded by Mr. Wonfor (Zool. s.s. p. 1561) deserves mention. This is now in Mr. Monk's collection, and is said to measure only five inches and one-eighth in length, while the other dimensions are in proportion.



ANTHUS SPIPOLETTA (Linnæus*).

THE WATER-PIPIT.

STRANGELY confounded by many writers with the Rock-Pipit, next to be described, though differing from it in characters of plumage, which will be immediately pointed out, and still more in its ordinary haunts, is a bird that has been long nominally known to naturalists and has somewhat inappropriately received the English name of Water-Pipit. This species is found in most parts of Europe, and having been taken in this country at least three times, its introduction to the present work seems necessary. Its first undoubted occurrence in England † was recorded in 1864 by Mr. John

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* *Alauda spinoletta* (misprint), Linnæus, Syst. Nat. Ed. 12, i. p. 288 (1766).

† In October 1843 Mr. Thomas Webster, of Manchester, observed at Fleetwood three examples of a Pipit which, from reading a diagnosis of *Anthus aquaticus*,

Pratt, of Brighton, who states (Zool. p. 9280) that an example had been killed near Worthing and another on the beach near Brighton some time before. These two specimens having been sent to Mr. Gould for examination were by him determined to belong to the *Anthus spipoletta* of continental authors (Ibis, 1865, p. 114). The Brighton specimen passed into the collection of the late Bishop Wilberforce, whose son, Mr. Wilberforce of Lavington, has kindly permitted Mr. Knox—the especial authority on Sussex ornithology, to make a fresh examination of it for the purposes of this work, while the present possessor of that which was obtained at Worthing, Mr. Thomas Boynton, of Ulrome Grange in the East Riding of Yorkshire, has as kindly submitted it to the Editor's inspection. In each case the result of the investigation confirmed the original determination of Mr. Gould. Since these captures became known several other supposed instances of the occurrence of this species have been placed on record. Most of these later specimens have been seen by the Editor, but one of them only can be declared to be truly an *Anthus spipoletta*. This is in the possession of Mr. Rowley and was obtained 26th October, 1868. The rest seem to be examples of the Scandinavian form of the Rock-Pipit to be mentioned under the account of that bird.

This species was sufficiently well characterized by Willughby and Ray, who met with it in Italy, as the *Spipoletta* of the Florentines—a name which under various forms seems to be nowadays used in some parts of that country for one kind of Pipit or another*. Linnæus in quoting the word misspelt it, and though Bonaparte restored the original orthography few have had the courage to follow his example. Bechstein in 1807 (Gemeinn. Naturgesch. Deutschl. Ed. 2,

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one of the synonyms of *A. spipoletta*, he subsequently identified with this bird (Zool. p. 1023), but, as he did not procure a specimen, the accuracy of the observation must remain open to question.

* Cetti (Ucc. di Sardegna, p. 159) said that *Pispoletta* was the right word (but that by a common metathesis becomes *Spipoletta*) and thereupon Pallas changed the spelling of the Linnæan name. His *Alauda pispoletta* however is a true Lark and quite distinct from the species under consideration (*see* Lord Walden's remarks, Ibis, 1869, p. 213, note).

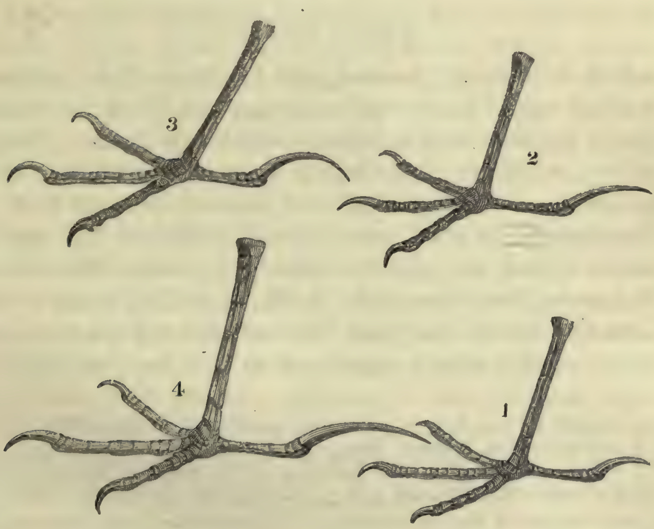
iii. p. 745) more fully described the bird in its winter-plumage as *Anthus aquaticus*, and since in that stage it much resembles our Rock-Pipit, the latter has been frequently miscalled by that name. In 1816 Koch made a distinct species of the bird as it appears in summer, terming it (Säugth. und Vög. Baierns, p. 179) *A. montanus*—a very suitable epithet, for at that season it inhabits mountain-slopes, breeding on the Alps and their high outliers even above the limit at which trees grow. The nest is said to be placed among loose stones, in the crevice of a rock or more generally among herbage, and is built of roots, mixed with moss, and lined with fine rootlets, bents, locks of wool and a few hairs. The eggs are four or five in number, of a french-white very closely mottled with dark brownish-olive, without much variation in tint, and measure from ·83 to ·78 by from ·64 to ·59 in. The bird is said to breed twice in the course of the summer, and its general habits are described as being very like those of its congeners, the cock rising in the air to sing, and then returning to perch on an elevated stone or bush. Its actions in searching for food resemble those of Wagtails. When the breeding-season is over it resorts to the margins of streams and lakes, where it continues until frost and snow drive it from the mountainous districts.

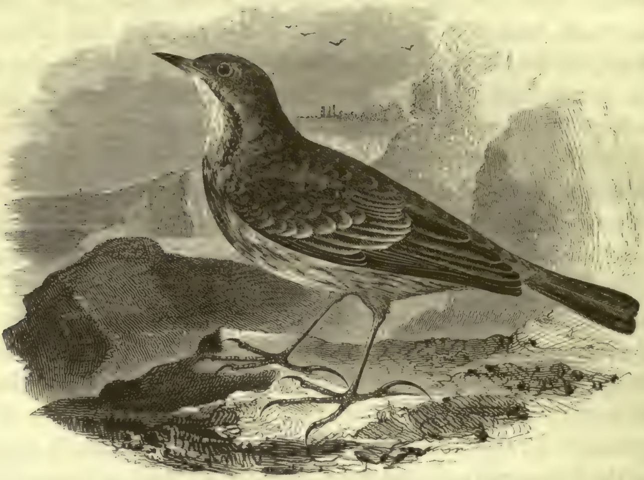
The range of this Pipit is very great though not, in Mr. Dresser's judgment, quite so wide as has been said. It would seem doubtful whether it occurs in any part of Scandinavia, unless it be in Denmark, where Dr. Kjærbölling says he has several times shot it. Mr. Gätke reports it from Heligoland, and it is found in winter in Holland and Belgium. In the north of France it is a bird of double passage. Throughout the rest of Europe it is more or less commonly distributed, breeding always on suitable mountains from the Straits of Gibraltar to the Ural, and descending to the low lands at other times of the year. In winter it is found in Algeria, and Canon Tristram obtained it even at Laghouat on the verge of the Great Desert. It is well known also at that season as an Egyptian bird, but it has not occurred to Capt. Shelley's knowledge in Nubia. It is found at the same time of year in Palestine, and Mr. Wyatt met with it in Sinai. Further to the eastward it frequents the high lands of Persia and Beloochistan, where Mr. Blanford obtained a good series of specimens, and it has been said to occur in North-western India, but examples thence present some differences and may deserve specific recognition. It also occurs in China and Mr. Swinhoe has received it from the Kurile Islands.

The bill is nearly black, with the edges of the lower mandible paler: the irides dark brown. In the breeding-season the top of the head, lores, ear-coverts and upper parts of the body generally are greyish-brown, passing into olive-brown towards the rump, and very slightly mottled with darker streaks along the middle of each feather; over the eyes and ear-coverts a distinct white stripe; wings dark greyish-brown, the feathers edged and tipped with lighter brown, these edges and tips being broadest on the upper coverts, where they form two conspicuous bars, and tertials, but gradually narrowing to the primaries; tail dark greyish-brown, the middle pair of quills with indistinct bars of a slightly darker shade and the edges lighter, the succeeding quills to the outer pair have their edges very narrow, the outer pair have the outer web and the distal portion of the inner web, in the form of an elongated triangular patch, pure white, while the second pair have a similar but smaller triangular patch of pure white at the tip of the inner web; the chin and a line under the ear-coverts nearly pure white, passing into a pale but warm vinaceous buff on the throat and breast, which becomes lighter on the belly, while the vent and lower tail-coverts are white tinged with ochreous; the flanks are deep hair-brown: the legs and toes blackish-brown, the claws black.

The entire length is about seven inches, and that of the wing, from the carpal joint to the tip of the third and longest primary, is about three inches and a half; but as in other Pipits there is often much difference in the size of specimens. The third, fourth and fifth primaries are nearly equal, and are emarginated near the tip; but the third is the longest and all of them are longer than the second.

The sexes hardly differ in plumage, but after the autumnal moult and in the young the greenish hue of the upper parts passes off and is succeeded by a more general tint of hair-brown, on which the darker streaks are more plainly visible. The warm buff of the lower parts is almost entirely lost, these parts becoming a greyish-white, and the throat, breast and belly are streaked distinctly with deep hair-brown. In this stage of plumage the bird so much resembles the Rock-Pipit as at first sight to be easily mistaken for it, but the darker colour of the legs and toes and the cleaner appearance of the lower parts will serve to distinguish the present species, while the pure white markings of the two outer pairs of tail-feathers form, on closer inspection, an unfailing criterion. From the North-American *Anthus ludovicianus* (which also occurs in Greenland) it may in this plumage be distinguished by the absence of any greenish or yellowish tinge, and the larger size of the streaks on the lower parts, which streaks in that species assume the form of tear-shaped or arrow-headed spots.





ANTHUS OBSCURUS (Latham*).

THE ROCK-PIPIT.

Anthus petrosus†.

THE ROCK-PIPIT, in some of its habits, its flight and song, so much resembles the two commoner species of this country that it was for a long time confounded with them. Pennant in the first edition of his 'British Zoology,' published in 1766, figured (pl. P 1. fig. 3) a bird, shot on the rocks of the Caernarvonshire coast, which was doubtless of this species, but he did not distinguish it from the ordinary Titlark, and Walcott in 1789 (Synops. Br. Birds, ii. p. 192) seems to have been its original describer‡. He called it the Sea-Lark, and rightly enough said it was found on the coast of Devon all

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[*] *Alauda obscura*, Latham, Index Ornithologicus, ii. p. 494 (1790).

[†] *Alauda petrosa*, Montagu, Trans. Linn. Soc. iv. p. 41 (1798).

[‡] There is, however, no little confusion on this point, and the precise share which Walcott, Latham, Lewin and Montagu took in the discovery, can hardly at this distance of time be apportioned, for some of their accounts are slightly contradictory.

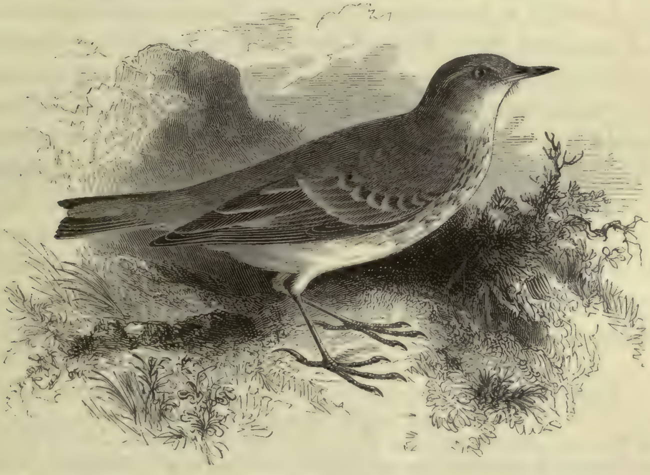
the year, building its nest in tufts of thrift, on the side of the cliffs, and seeking its food among the seaweed when the tide is out. Latham however had priority in publishing a scientific name for the species. He says he saw it first in the Leman Collection, but the example he describes was obtained from Lewin, who found it in the Kentish marshes and himself figured the species as the Dusky Lark in the following year (1791). In that year also Montagu, whom Latham had consulted on the subject, discovered it in all rocky situations along the coast of South Wales from Monmouthshire to St. David's and found it was known to some of the fishermen as the Rock-Lark,—which name or its equivalent, Rock-Pipit, has generally been continued to it, and since Montagu's time few if any mistakes have been made by British authors between this and our other common species.

The localities frequented by the Rock-Pipit are strikingly distinguished from those in which the other Pipits are so constantly found. The Rock-Pipit is scarcely ever seen except within a short distance of the sea-coast, where it is very generally distributed, remaining in this country throughout the year. When the breeding-season is over it often resorts in some numbers, though hardly so as to be deemed gregarious, to low flat shores near the sea, and salt-marshes. It feeds on marine insects, small univalve mollusks (*Littorinæ*) and little crustaceans (*Gammari*), sometimes seeking its food close to the edge of the retiring tide or wading in the surf; and it may be seen very busily engaged in the examination of the seaweed that is drifted ashore in search of its living. Small seeds also form part of its diet. Its flight is wavering and desultory. When disturbed it flits from point to point, frequently repeating a shrill chirp, and, when perched, agitating its body and tail with a vibratory motion. The song of the cock is short, but loud and cheerful in character, much resembling that of the Tree- and Meadow-Pipit and delivered in the air with much of their action.

The Rock-Pipit makes its nest on the ground or on ledges of rock at various elevations on the seaward face of a cliff, often choosing, in accordance with the nature of the locality, a recess under a stone, a tuft of grass, moss or other plants characteristic of a maritime situation, to afford additional shelter. The nest is made up of several sorts of dry grasses mixed sometimes with seaweeds, and is lined with finer materials of the same kind together with some hair when it can be got. The eggs are four or five in number, variable in colour, presenting two types—one reddish-brown, the other olive, but with many intermediate phases: the ground is french-white, sometimes with a decidedly green tinge, and is usually closely mottled or suffused and at times marbled with darker markings of some shade of reddish-brown, olive or brownish-grey. The eggs measure from ·89 to ·78 by from ·67 to ·61 in. There are commonly two broods in the season and the young of the first are hatched early in spring.

The Rock-Pipit is a constant inhabitant of nearly all the shores of the United Kingdom, breeding in the manner just described along the whole coast-line of England with the remarkable exception of that part which lies between the Thames and the Humber, where it would seem to occur only on passage; for though resident as a species it is, like so many of our birds, migratory as an individual. In Scotland and Ireland however no such exception is known, and it is found commonly everywhere and at all seasons on their coasts as well as on those of their adjacent and out-lying islands, even to St. Kilda and Shetland. It is also abundant in the Færoes, but is not known in Iceland or Greenland.

On the European continent, the distribution of our Rock-Pipit is not very easily traced, and the fact must be recorded that examples from most parts of Scandinavia, and probably from the shores of the Baltic generally, present a rufous or vinous colouring on the breast, inducing some ornithologists to regard them as forming a distinct species to which the name of *Anthus rupestris*, conferred in 1817 by Prof. Nilsson (Orn. Svec. i. p. 245), should perhaps be applied. These ruddy birds, as might be expected, occasionally visit England and have most likely given rise to the confusion existing in years gone-by as to a so-called "Red Lark"—the *Alauda rubra* of older writers—said to occur in this country, while several British authors, even the accurate Macgillivray among the number, have confounded them with the North-American Pipit, *Anthus ludovicianus*—a species not as yet proved to have been observed in Britain. More recently other English ornithologists have seen in them examples of the European *A. spipoletta*, just described. From either of the species last mentioned *A. rupestris*, as here figured, can be readily distinguished by having the patches at the end of its outer tail-feathers not white but of a pale greyish-brown, just as in our own Rock-Pipit, which indeed it otherwise so nearly resembles that the warmer colouring of the lower parts is the sole indication of difference that can be relied upon, and this variation of tint seems to the Editor insufficient to establish any distinction worthy of being accounted specific.



Examples of this Scandinavian form seem to have been met with in various parts of the country:—by Edwards, many years ago, near London; by Macgillivray, in 1824, near Edinburgh* (Man. Br. Orn. i. p. 169); by Mr. Stevenson, more than once, in Norfolk; by Mr. Rowley, several times, at Brighton; and by Mr. Marcus Rickards twice on the Severn (Zool. s.s. p. 2222); while Mr. Hancock has one shot from the nest at Chepstow in Monmouthshire, 18th April, 1854 (Ibis, 1865, p. 237). Several of these specimens have, by the kindness of their owners, been submitted to the inspection of the Editor, who, when crossing the North Sea, from Gottenburg to Hull, in October 1869, observed some examples on board the steamer, one of which remained until within a few hours of sighting the English coast.

Regarding then *Anthus rupestris* as specifically identical with *A. obscurus*, the Rock-Pipit may be said to occur along the whole coast of Norway from the Varanger Fjord, where it breeds not uncommonly, southward, and the west coast of Sweden, appearing occasionally on the shores of the great lake Venern, and to frequent most parts of the shores of the Baltic. Thence it can be traced along the coast of Denmark, Holland, Belgium and western France as far as Bayonne, but seldom far from the seaside. It is also pretty plentiful on the Channel Islands. It is doubtless to be found further to the southward, but positive information on this point is wanting, except as to its occasional occurrence at Malta.

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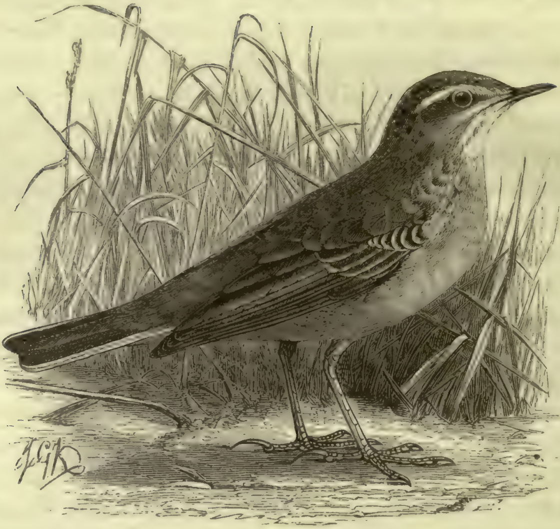
* Macgillivray, close observer as he was, did not detect the difference, above stated, between this form and the American species. He had not kept, it is true, the examples which he shot, 2nd June, 1824, but only his notes made at the time, with which he compared two specimens in the Museum of Edinburgh, said to have been shot near that capital in August 1824, and a third from the Saskatchewan. All these birds he considered to belong to one species, which he further erred by terming *Anthus spinoletta*, for it is clear on carefully reading what he says that not one of them was of that species. His first and briefer description of the birds obtained by himself (*tom. cit.* p. 169) seems to be that of an undoubted *A. rupestris*, but his more elaborate description (pp. 170, 171) appears certainly to be that of the American *A. ludovicianus*, and that of the female (p. 171) to refer again to *A. rupestris*. Further to complicate the matter Mr. Morris, some years since, called the birds mentioned by Macgillivray the "Red-throated Pipit" and figured *A. cervinus* (for which see above, page 579, note) as a British species. Dr. Bree (B. Eur. ii. p. 165) pointed out this mistake, which has however been repeated by its author in his latest edition. To the same species Mr. Morris also erroneously ascribed some birds, of which he was told by Mr. Gray, seen near Dunbar in 1846, and others killed in the same neighbourhood a few years later. These possibly belonged to *A. rupestris*, but not having been preserved the point must remain doubtful.

The bill is dark brown with the edges and base of the lower mandible dull orange: irides dark brown: the top of the head, ear-coverts and upper parts of the body generally nearly uniform olive-brown, obscurely streaked along the middle of each feather with a darker shade; over the eyes and ear-coverts a light ochreous stripe, not always conspicuous; wings much as the dark streaks on the back, but the edges and tips of the feathers lighter, these edges and tips being broadest on the upper coverts and tertials, and thence gradually narrowing to the primaries; tail dark brown, the middle pair of quills barred with a deeper shade and edged with greyish-brown, the succeeding feathers, to the outer pair, very narrowly edged, the outer pair greyish-brown on the outer web and with a triangular patch of the same on the distal part of the inner web, becoming almost white at the tip—an indistinct trace of a similar mark being sometimes visible on the tip of the second pair; the chin greyish-white; the sides of the neck mottled with olive-brown and dull ochreous; the throat, breast, belly and lower tail-coverts, dull ochreous-olive, streaked and clouded with greyish-brown; the flanks olive-brown: the legs, toes and claws, brown; the hind claw slightly longer than the toe.

The sexes do not differ in plumage: during the breeding-season the adults are of a dull brown above, but slightly tinged with green. After the breeding-season, both old and young have more of the olive tint above.

The whole length of an adult is about six inches and three-quarters, but rather less than more. From the carpal joint to the end of the longest primary, three inches and five-eighths: the second quill slightly longer than the third, fourth or fifth which are equal, and are emarginated on the outer web near the tip: the tertials rather short for a bird of the genus.



Anthus campestris (Linnæus*).

TAWNY PIPIT.

The bird above represented is so common in many countries of Europe and even in some of those which confront our shores that it is rather a matter of wonder the species should have remained for so long a time unrecognized as an occasional visitor to this island—the more so because since its occurrence here was noted several examples have been recorded as obtained in England. To Mr. Rowley is due the credit of making known this addition to our casual Fauna. In 'The Ibis' for 1863 (pp. 37–39) he stated that an example was shot near Shoreham Harbour, on the 17th August, 1858, which being mistaken for a Richard's Pipit, the bird next to be described, passed into the collection of Mr. Henry Collins of Aldsworth, and there remained as such until Mr. Rowley's attention being especially drawn to a Pipit, shot near Rottingdean on the 24th

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* *Alauda campestris,* Linnæus, Syst. Nat. Ed. 12, i. p. 288 (1766).

September, 1862, and examined by him in the flesh, he found that both this specimen, now in Major's Spicer's possession, and that previously obtained belonged to a species not hitherto known to have been observed in Britain. On the 30th September, 1864, a third English example of the Tawny Pipit, for such the two already mentioned proved to be, a male taken in a clap-net near Brighton, was seen by Mr. Rowley about an hour after its capture and alive (Zool. p. 9327). This is now in Mr. Monk's collection. A fourth, a male in freshly-moulted plumage, was shot 19th September, 1868, by Mr. Augustus Pechell on Trescoe, one of the Scilly Isles, and was examined the same day by Mr. Rodd (Zool. s.s. p. 1458) in whose possession it still is. On the 6th September, 1869, two more are said by Mr. Wonfor (Zool. s.s. p. 1918) to have been shot at Rottingdean, of which one was too much injured to be preserved; and on the 20th November following a bird, which, though some doubts have been expressed on the subject, was determined by Mr. Gould (Zool. s.s. p. 2068) to be of this species, was shot on the sandhills to the south of Bridlington Quay by Mr. T. Boynton, in whose possession it remains. On the 29th September, 1870, as the Editor is informed by Mr. Rowley, another Tawny Pipit, an immature bird, was caught at Rottingdean. This is recorded by Mr. Bond (Zool. s.s. p. 2383) and is now in Mr. Monk's collection, while a ninth British example was netted near Brighton early in October, 1873 (Zool. s.s. p. 3832) and passed into Sir John Crewe's possession.

The Tawny Pipit is a summer-visitor to the greater part of Europe, shewing, with a few exceptions, a preference for dry and barren places. In Holland it breeds on the sandhills near the sea, and it is met with in suitable localities from thence to the south of Sweden and in the larger islands of the Baltic, while it has occurred in Finland. In the eastern parts of North Germany, Livonia and Esthonia it becomes more common, but in the interior of Russia it does not seem to go further northward than Jaroslav, though it is very common on the steppes of the south. If it be, as has been supposed, the same as the *Alauda grandior* of Pallas, it is found, according to that naturalist, throughout the salt-deserts of Mongolia, where the Père David also says it is abundant, adding that it occurs on passage at Pekin, but Mr. Swinhoe has not yet recognized it as a bird of China, and its eastern limits are at present obscure. In some parts of India it is exceedingly abundant, and it inhabits Beloochistan, Persia and Arabia. Thence it is found in Abyssinia, Kordofan and along the valley of the Nile to the Delta, being an early spring-visitant to Nubia and Egypt. In the more elevated parts of Algeria it is remarkably numerous, and is also found, but less plentifully, on the sandy borders of the Sahara. It is said to have occurred at Cazamanze on the west coast of Africa, while Andersson obtained it in Damaraland. Returning to Europe it is common in many districts of Portugal and Spain, and in the south of France is especially abundant, but it occurs also irregularly in the north in spring and autumn, and is said by Demarle to breed commonly in the neighbourhood of Boulogne, as it also does, according to M. de Selys, on the heaths of the Ardennes in Belgium. Within the wide circuit of which the outline has just been given it is found with more or less frequency wherever wide, sandy places exist.

Due regard being had to the nature of the locality it generally frequents, the habits of this Pipit would seem much to resemble those of its congeners. By some observers it is said to be shy, whilst others describe it as the tamest of birds, flitting away in front of the traveller and keeping unconcernedly a few yards ahead of him—the difference being no doubt owing to the experience it has of man's treatment. Its plumage, harmonizing with the colour of the soil, makes it in many places difficult to be seen, while on the ground, over which it trips quickly for some paces and then, stopping for a few moments, wags its tail in the manner so characteristic of birds of its Family. Its flight is strong and undulating. Occasionally it will alight on a low bush, if such there be, but as a rule it keeps to the ground. Its call-note is harsh and frequently uttered, recalling at times, it is said, that of the Short-toed Lark : its song is monotonous and consists of sharp notes delivered on the wing.

The Tawny Pipit places its nest in tufts of grass, at the foot of a shrub and sometimes among heather or even in corn-fields, sheltered by a clod of earth, or in a dried-up watercourse beside a stone. According to Mr. Salvin, who had ample means of observing this bird in Algeria, its nest is composed of roots with a lining of horsehair, and is generally placed on the lee-side of a bush, the prevailing wind there being from the north-west. The eggs are five or six in number, measuring from ·91 to ·78 by from ·64 to ·59 in., and are subject to a good deal of variation in colour, being of a french-white boldly and rather sparsely blotched, speckled or mottled with brown of several shades and dull lilac, or of a yellowish-white dappled and streaked with bright purplish-brown. Some specimens are strangely like those of the Rufous Warbler already described (page 358), but they are generally more decidedly marked. In Germany this Pipit is said to have but one nest in the season and that towards the end of May. Its food is believed to consist entirely of small insects, chiefly belonging to the Orders *Coleoptera* and *Neuroptera*, which it catches as it runs, and it is said never to eat seeds when at large. It is curious, when the arid nature of the bird's haunts are considered, to learn that it does not cleanse its plumage as Larks do by dusting itself, but invariably bathes in water.

The bill is dark brown at the base of the upper mandible, becoming lighter towards the tip, and the lower mandible is pale yellow-brown : the irides dark brown : a light buff stripe passes over the eyes and ear-coverts which last are brown ; the top of the head and upper parts generally are dull greyish-brown, each feather darkest along the shaft and more or less broadly edged with light tawny, the outer webs of the primaries and secondaries with narrow and greyer edges ; the outer pair of tail-feathers dull tawny-white, with an elongated, dark patch extending from the base nearly the whole length of the inner web, and the shaft tinged with brown at the base and at the tip; the next pair similarly marked but with the dark patch extending nearly to the tip, the shaft entirely brown; the remaining feathers are brown, the middle pair, which are shorter than the others, broadly and the next pair narrowly edged with light tawny; the chin and throat dull tawny-white, becoming deeper on the sides of the neck and on the breast and flanks, and then again paler on the belly, lower tail-coverts and thighs; from the lower corner of the bill there runs on each side a short dusky stripe, and a few indistinct dusky streaks are dispersed over the breast: legs, toes and claws yellowish-brown, the hind claw moderately developed and but slightly curved.

The whole length of the bird is about six inches and a half, and of the wing from the carpal joint about three inches and three-quarters, but the dimensions are somewhat variable as is also the intensity of coloration. The female is similar to the male, but is often without the streaks on the breast. The young of the year are said to be browner than the adults, and to have their feathers edged and tipped with a lighter shade, so as to present what bird-fanciers call a more "spangled" appearance.

Though ornithologists have pretty generally agreed to recognize in this bird the *Alauda campestris* of Linnæus*, his diagnosis of that species must be admitted to be anything but diagnostic, while his description (Faun. Sv. Ed. 2, p. 77) does not fit any known Lark or Pipit. Yet his choice of a trivial name was very happy, for no European species of Pipit seems to affect a champaign country, in the strictest sense of the term, so exclusively, and Temminck's plea for changing the epithet to *rufescens* on the ground that *campestris* may be confounded with *pratensis*, is one that (the law of priority apart) no scholar would for a moment allow. A few writers have seen in this species the "Willow

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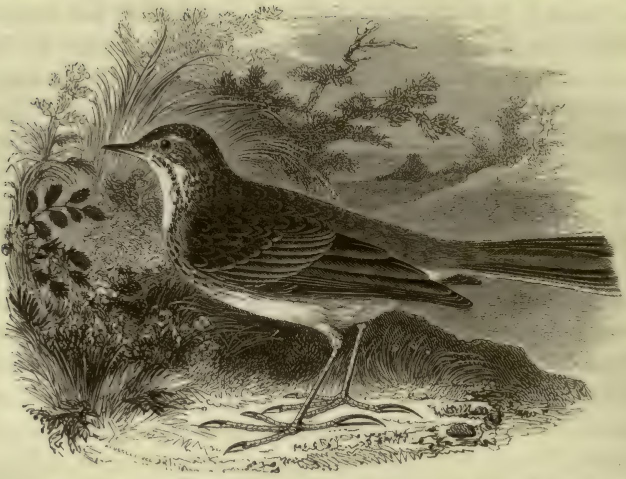
* The chief exceptions are Bechstein who, while calling this bird *Anthus campestris*, considered the *Alauda campestris* of Linnæus to be *A. spipoletta*, and Vieillot (N. Dict. d'H. Nat. Ed. 2, xxvi. p. 497) who thought Linnæus's bird was a hen Wheatear!

Lark" of Pennant's earlier editions, regardless not only of his description but also of the fact that he subsequently (Brit. Zool. Ed. 4, i. p. 322) rightly referred that bird to the Sedge-Warbler. In Provence it has long had a local name, *Fiste*, the origin of which seems uncertain, though some authors say it is taken from the bird's note; but this, as syllabled by most observers, has no resemblance to the sound of that word. In Germany it is commonly known as the *Brachpieper*, that is "Breck-Pipit," a very characteristic appellation, and if there were not so many other cases of the kind as to assure us that the attempt would be at present useless, we might exercise our ingenuity in trying to discover the reason why the barren brecks of our Eastern Counties and the apparently no less suitable sandy heaths of the south of England do not afford this species as congenial a home as the very similar tracts of country which it frequents on the continent of Europe.

This bird is the type of the genus *Agrodroma* proposed by Swainson, and frequently recognized by later writers.



ANTHUS RICHARDI, Vieillot*.

RICHARD'S PIPIT.

Anthus Ricardi.

THIS fine species was first made known as a visitor to England by Vigors, who at a meeting of the Zoological Club of the Linnean Society, 13th April, 1824[†], exhibited a specimen that was netted alive in the fields to the north of London in October, 1812 (Zool. Journ. i. p. 280). Rennie, in his edition of Montagu's 'Ornithological Dictionary,' published in 1831, noticed another taken at Oxford; and Mr. Proctor, of Durham, informed me that he shot a specimen, 13th February, 1832, near Howick, on the

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[*] Nouv. Dict. d'Hist. Nat. Ed. 2, xxvi. p. 491 (1818).

[†] In the course of that year he seems to have obtained a second specimen (*see* Fleming, Br. Anim. p. 75) which he also exhibited at a meeting of the Linnean Society, 2nd November, 1824, but the paper then read, as now printed in the Society's 'Transactions' (xiv. p. 556) does not allude to this species. As Mr. Kippist, having kindly searched, reports that the original manuscript does not exist in the Society's archives, the point is scarcely to be settled.

Northumbrian coast, which went into the collection of Mr. Gisborne, of Yoxall Lodge, Staffordshire. Mr. Gould in his 'Birds of Europe' mentioned two instances of the capture of this species near London in the spring of 1836, and the British Museum, in 1837, obtained a specimen, which is said to have been killed at Bermondsey and may have been one of these last.

Since then some fifty examples have been recorded as obtained in England*, so that any particular notice of each occurrence is needless. By far the larger proportion of these have been taken in Sussex, near Brighton; but Cornwall including the Scilly Isles, Devonshire and Norfolk have each contributed a good share, while the bird has also been procured in Kent. Shropshire is the only inland county to be added to those before mentioned, and it is to be remarked that nearly all the English examples have been obtained on or near the sea-coast. Several of them have been taken, after an interval of some years, in precisely the same spots, shewing that there is something in the nature of such localities to make them attractive to the species. It would seem to visit England in September or October and to remain here if permitted till the following spring. One is said to have been seen so late as May (Zool. p. 9719), but most of the occurrences have certainly taken place in autumn or early winter, and there is not the slightest evidence pointing to an arrival here in spring. Between the years 1851 and 1864 only one capture seems to have been made (Nat. 1853, p. 157), and again from 1869 to the present time there has been a similar dearth of records, but between those two periods upwards of twenty are said to have been taken, while doubtless many more had the luck to escape notice.

The habits of this species present some other unexplained peculiarities. Though it has been many times met with in many countries of Europe, as will immediately be shewn more fully, it almost always appears singly or in very small companies, and, notwithstanding assertions which have been made to the contrary, there seems to be no reasonable ground for believing it to breed in this quarter of the globe, so that the birth-place of those examples of the species which visit Europe has still to be determined. Its authenticated eggs have only of late been known to oologists*. Specimens were obtained in Dauuria, where the bird is said to be common, by Dr. Dybowski, who however gives no information as to its nidification except that it lays five or six eggs (Journ. für Orn. 1868, p. 339), and examples procured from this gentleman, which have been seen by the Editor, are of a greyish-white closely freckled or suffused with greyish-olive and measure from ·9 to ·78 by from ·67 to ·62 in. Observers of this Pipit have remarked that it is strong on the wing, as its frequent visits to western and southern Europe would of themselves suggest, and that it repeats a loud note, syllabled as "chay", at every rise of its undulating flight, this note being audible at a great distance and sufficiently like that of other birds to have attracted attention in several instances. On the ground it stands very high, owing to its long legs, and it has been often observed to frequent pastures over which it runs nimbly, with much of the peculiar action of its family, seeking the insects that affect the dung of the cattle feeding there, or in the south of France to resort to newly-mown fields of lucerne, and is said never to perch on trees.

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* Mr. Edward says (Zool. p. 6596) he once saw it in Banffshire, but the specimen does not seem to have been procured, and there is no other record of its occurrence in Scotland.

This species was made known to Vieillot by M. Richard of Lunéville, a very zealous lover of ornithology, from two examples obtained in Lorraine, the first in October, 1815†, and the second at the same season of the following year. About the same time Delamotte also procured a specimen in autumn in Picardy, which with one killed in the Pyrenees were the only examples that Temminck had seen in 1820. In 1822 Bernhard Meyer stated that Johann Natterer had found it near Vienna*, and in October 1826 one was killed according to Savi near Pisa. Subsequently it was noticed in Provence by Roux, who thought it bred there, wherein he was doubtless mistaken, but its not unfrequent appearance in that part of France has since been abundantly confirmed.

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* The eggs figured in various oological works as those of this species were most likely those of the Tawny Pipit just described.

† Thus Vigors's specimen, killed in 1812, was the first known to have occurred any where.

Richard's Pipit has occurred twice in the south of Norway and once in Sweden. It comes to the islands lying off the north-west coast of Germany so frequently in autumn that it may be considered an almost regular visitant to Borkum and Heligoland. It has also been met with in Holland and Belgium, and has been said to breed in the former country, but particulars are wanting and the statement must be regarded as questionable in the highest degree. It is now believed to occur every autumn in the north of France, and a few are met with almost every year in the south of that country between August and December, while it occasionally appears there in April. It has also been obtained in the south of Spain in winter and early spring, as well as in Algeria. According to Dr. Salvadori it is of rare and irregular appearance in Italy, though Sig. Bettoni declares it to be a characteristic species of the Lombard plains. It has been met with two or three times in Malta. Credit has been given it for summering and breeding in Greece, but it would seem doubtful from Dr. Lindermayer's experience whether it ever occurs there at any time of year. Mr. Dresser was informed by Dr. Krüper that he believed it bred near Smyrna, a supposition of which time will tell the truth. Evidence of its occurring in North-eastern Africa is very slight. Prof. von Nordmann says he has killed specimens at different times of the year at Odessa and therefore presumes that it breeds in Southern Russia, but dissents from Gloger and those who have referred to this species the *Anthus rupestris* of Ménétries, found by that naturalist in the Caucasus, and not since identified.

In the central parts of Europe Richard's Pipit is, except from the Austrian specimen already mentioned, utterly unknown, and hence we are driven to hazard the conjecture that the examples which visit the above-named countries or districts have their origin still further to the eastward, whence they pass rapidly and unobserved over the intervening territory. As has been before stated, it is said to be common in Dauuria, but it certainly does not inhabit Western Siberia. Mr. Dresser suggests that the *Anthus campestris* of Dr. Radde, which he says is not uncommon in parts of Eastern Siberia, may be this species. In the south of China it is found throughout the winter, and Mr. Swinhoe supposes it may breed on the hills near Foochow and Amoy. It has been obtained in Siam, Burma and the Andaman Islands, and it occurs over the greater part of India, though only in the cold weather, from Nepaul and the Himalayas to the extreme south, as well as in Ceylon. Jerdon says that in India it always affects swampy or wet ground, but Beavan found it to frequent dry and sandy spots. It is brought in large numbers to the Calcutta market and sold under the name of Ortolan.

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* One was bought alive in the market of this city in September, 1819, according to Herr von Pelzeln, but no other example is mentioned by him, and this, as will appear, is the only specimen known to have occurred in Central Europe.

The figure here given was taken, like those of Bewick and Selby, from the bird originally obtained by Vigors, which, with his whole collection, was subsequently presented to the Zoological Society, but since the dispersal of the magnificent museum of that Society its fate is unknown to the Editor.

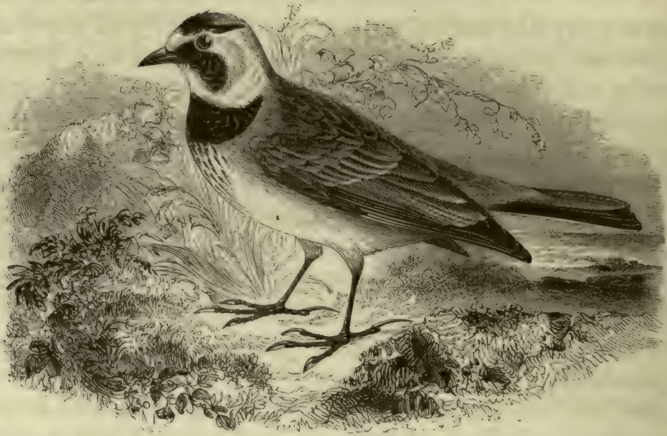
The upper mandible is dark brown, lighter along the edges, the lower mandible pale yellow-brown: the irides very dark brown: a light buff stripe passes over the eyes and ear-coverts, which last are brown; the top of the head and upper parts generally are dark clove-brown, each feather more or less broadly edged with light yellowish-brown, but the back and rump are duller and more uniform in colour; wings dark clove-brown, the greater coverts and lowest row of the least coverts edged with dull white and the middle coverts with buff, thus forming three distinct light bars across the folded wing; the outer edges of the quills light, those of the primaries very narrow, but those of the tertials broad and strongly tinged with ochreous, while those of the secondaries are intermediate; the outer pair of tail-feathers dull white, with an elongated dark patch at the base of the inner web; the second pair very similar, but with the dark patch extending nearly to the tip, and the shaft dark brown; the rest are brown, the third pair having a slight trace of white at the tip, and the middle pair, which are shorter than the others, edged with light wood-brown; the chin and throat are white, passing into buff on the sides of the neck and on the breast and again becoming paler on the belly, the middle of which, with the thighs and lower tail-coverts, is nearly white, the flanks however are clouded with dull buff; from the lower corner of the bill there runs on each side a line of dark brown, lanceolate spots, which becoming broken up spreads over the breast so as to form a kind of gorget, and loses itself on the sides of the body: legs, toes and claws, pale flesh-colour; the hind claw very long, and but slightly curved.

The whole length of the male is about seven inches and three-quarters. From the carpal joint to the end of the longest primary, three inches and five-eighths, but the species varies a good deal in size; the second, third and fourth feathers of the wing are very nearly equal in length, but the third is rather the longest.

The female resembles the male, but is said to be less rufous: the young have the upper parts duller and paler, with rather more spots on the throat and breast.

Vigors suggested the removal of Richard's Pipit from the genus *Anthus*, proposing for it the term *Corydalla* (Zool. Journ. ii. p. 397), and this distinction has been adopted by many systematic writers.

The woodcuts at the foot of page 585 shew the feet of the four commoner British species of Pipit in the order in which they have been described here—namely, fig. 1 the Tree-Pipit, fig. 2 the Meadow-Pipit, fig. 3 the Rock-Pipit and fig. 4 Richard's Pipit.



OTOCORYS ALPESTRIS (Linnæus [*]).

THE SHORE-LARK.

Alauda alpestris.

OTOCORYS, *Bonaparte*[†].—Bill rather short, subconic, upper mandible slightly arched and without notch. Nostrils basal, oval, closely covered by bristly feathers directed forwards. Gape straight. Head in the adult male with a tuft of long, erectile feathers on either side of the occiput. Wings long; the first primary so small as at first sight to seem wanting, the second the longest, but the third nearly its equal, the fourth decidedly shorter, secondaries short and emarginate at the tip; tertials comparatively short, about equal to the seventh primary. Tail rather long and slightly forked. Tarsus blunt and scutellated behind as well as before, shorter than the middle toe; claws moderate and very slightly curved, that of the hind toe being comparatively straight.

THE LARKS in several ways link the foregoing family to the Buntings and Finches which are to follow, yet many systematists refuse to regard the similarity which the Larks bear to the Pipits as indicating any real affinity, and some even declare that the former are a group quite distinct from all the other *Passeres* of the Old World. This extreme opinion is chiefly based on the fact that the *Alaudidæ* have the tarsus rounded behind and covered with scales there as well as in front, instead of its back being formed by a single sharp ridge-like plate, or at most by two such plates. Another character on which much stress has been laid is taken from the primary feathers of the wing; but this must be abandoned, since among the Larks there are some species in which the first primary is comparatively large, others in which it is much less developed and others in which it is so small as to have been often described as wanting[*]. The structure of the casing of the tarsus seems to furnish a very good diagnostic of the *Alaudidæ*, but whether any other constant characters of importance can be found seems doubtful, and therefore to sever this family so widely from birds with which in other respects it greatly agrees and to ally it to others with which it has little else in common seems inexpedient. Some Larks—the Woodlark for example, have a bill almost as fine as a Pipit's, others, as the North-African *Rhamphocorys clotbey*, have it as powerful as a Grosbeak's, others again have it elongated and curved, so much so that one of them was described in the last century as a Hoopoe[†]. Nor is the elongated hind claw diagnostic of the Larks, since some have no remarkable development of it, while there are certain Pipits and Buntings with this claw of great length. Most Larks, indeed all but one of the European species, have the nostrils covered by short feathers and not exposed as in the Pipits, and there is also an asserted physiological difference, already mentioned, between these families, namely that Larks moult but once in the year while Pipits moult twice, and again, though this is of less importance, the plumage of the nestling in Larks differs greatly in its mottled style from that of the adult, this not being the case in the Pipits. Furthermore

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[*] *Alauda alpestris*, Linnæus, Syst. Nat. Ed. 12, i. p. 289 (1766).

[†] *Otocoris* (misprint), Bonaparte, Iconografia della Fauna Italica, i. Introd. alla Classe II. fol. **** (1840 ?).

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[*] M. Vian has some remarks on this subject (Rev. Zool. 1871–72, p. 84) but he is mistaken in stating that there are some European Larks which have not this feather.

[†] *Upupa alaudipes*, Desfont. Mém. de l'Acad. 1787, p. 504; *Alauda desertorum*, Stanley.

Larks generally bathe, so to speak, in dust, while even the desert-loving species of Pipits do not, and, finally, Larks do not wag their tails as Pipits do. The structural characters offered by the *Alaudidæ*, of which about one hundred species are known, being very varied, convenience demands that they should not be retained in a single genus, and very many ways of separating the family have been proposed. The six species to be here included seems referable to four groups, the diagnosis of each of which can be given without much difficulty, and the bird to be first described belongs to one that can be at once distinguished by the style of its coloration.

In March 1830, a specimen of the Shore-Lark was shot on the beach at Sherringham, in Norfolk (Mag. Nat. Hist. iv. p. 116) and, having been preserved by the late Mr. John Sims, then of Norwich, passed into the collection of the late Mr. Lombe, the whole of which was in 1873 presented by his daughter to the Norfolk and Norwich Museum.

A second British example of the species, according to the testimony of Mr. Eyton, was killed in Lincolnshire prior to the end of 1837 ; and before November 1838 I had heard of a pair that were obtained together on a down in Kent, the male only of which was preserved.

Of late the bird has appeared so often on the east coast of Great Britain that details of each occurrence would be needless, did they not shew the progressively increasing frequency of its visits to our shores. Lord Haddington informed Mr. Gray of one that was shot at Berwick-on-Tweed in 1840. In November 1850 a specimen was obtained at Great Yarmouth, and in March 1853 one at Filey in Yorkshire. In March 1855, two were taken at Blakeney in Norfolk, and in January 1859, according to Mr. Gray, a small flock appeared on the estuary of the Tyne in East Lothian, out of which at least three specimens were procured. In November 1861 three were taken alive at Brighton out of a flock of five, and between that month and April 1862, six more were killed at Great Yarmouth. In November 1862 one was killed at Lowestoft, and in the same month two years later two were shot at Aldeburgh in Suffolk. Early in 1865 a flock of about a score appeared at Gunton near Lowestoft, from which three were obtained, one was caught in the Hackney marshes near London, and about the same time a flock was observed near St. Andrews out of which two were trapped. In April 1866 two were shot, out of a flock of about a dozen, near Flamborough, and during the following winter some four pairs were killed on the coast of Norfolk and Suffolk. In November 1868, one was netted at Dover, and in the winter of 1869-70, a considerable number must have visited the east and south coasts of this island, no less than seventeen specimens having been procured, while others were seen, at various localities reaching from Aberdeen in the north to Weymouth in the south, between the middle of November and the month of March following. Next winter still more appeared, but the flight seems to have arrived at Salthouse on the north coast of Norfolk and not to have extended further. Before the end of November at least forty had been shot and more than a score were killed in the following January, besides which Mr. Upcher had seen others. In the winter of 1871-72 only one specimen was recorded as obtained, namely at Whitby, which seems to have been the last observed in this country, but the two past winters, it will be remembered, have been singularly mild. A remarkable fact, first noticed by Mr. Stevenson, is that until 1865 inclusive every example procured on our shores which had been dissected proved to be a cock, but in the great visitation of 1870-71, a fair proportion of hens appeared, while all seemed to be young birds of the year*.

The Shore-Lark inhabits the northern parts of Asia and Europe. It is also very widely distributed in America and elaborate accounts of it are given by the ornithologists of that country. It seems however more proper to describe its habits as observed in our own quarter of the globe rather than in others, since the examples which occur in this country are no doubt natives of Europe. Though it was not recognized as a Scandinavian bird until 1837*, it is abundant in certain localities in that part of Norway, Sweden, Finland and Russia known as Lapland, and it may even eventually prove to inhabit the higher mountains of their more southern districts. Wolley informed Mr. Hewitson that it bred on the high lands of the interior of that country, having indeed procured two nests from the mountains above Mukka-uoma in 1854, and that in autumn flocks of this bird are to be seen in the corn-fields, like Skylarks elsewhere, on their way southward along the course of the rivers. But still further to the north-east, in East Finmark and especially on the shores of the Varanger Fjord, he, and the Editor in his company, found it very common, and more numerous in the cultivated lands and meadows near the sea than on the hills. Trustful and tame, it would also resort familiarly to the neighbourhood of houses, and even enter the open streets of the village in search of its food. "It was very delightful," he writes, "to hear it singing as it sat on a post, or on a rail, or a barn top. At one house where I was staying, it used to come on the roof soon after midnight, and sing for several hours in the cool sunshine." The nests, of which many were found, were placed in a depression of the ground, often near a stone, but generally without any sheltering herbage near them. They are slight in structure, consisting of a few little twigs and plant-stalks, as an outwork protecting a mass of sheep-grass, and are lined with tufts of rein-deer hair and down from the willow or seeds of *Compositæ*. The eggs are four or occasionally five in number, measuring from ·98 to ·81 by from ·67 to ·58 in., and are of a french-white, closely mottled with dull olive-green or light yellowish-brown, the markings being ill defined and often somewhat confluent, while occasionally a dark hair-line runs irregularly across some part of the larger end. The Shore-Lark has at least two broods in the year, and there is nothing very peculiar to be noticed in its breeding habits or actions. The call-note is so clear and mellow as to have obtained for the species in Lapland a name signifying "Bell-bird." The song of the cock is lively but not very loud, and is more generally delivered when the bird is standing on some elevation than when on the wing, though at times an observer might fancy he was watching the characteristic flight if not listening to the notes of our own favourite at home.

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* The only instance recorded of the occurrence of this bird in Britain except on the shores of the North Sea and the English Channel is by Mr. Morris (Br. B. Ed. 2, ii. p. 151) and said to have been at Llandudno, but unfortunately no particulars are given by him.

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* Prof. Nilsson, in 1835, suggested the probability of its discovery there, which was made two years later by Prof. Lovén (Vet. Acad. Handl. 1840, p. 41) in East Finmark. The former has since urged that the bird has but recently established itself in Scandinavia as a colonist from the eastward, but this idea is opposed by Prof. Sundevall, who believes that its existence had hitherto been overlooked, citing in support of his opinion Klein's recorded occurrence of the species near Danzig in 1667 and 1747 (Hist. Av. Prodr. pp. 72, 156). This author, knowing only that the bird had been described by Catesby as American, imagined his examples had been driven by a storm to Norway and thence found their way to the old Hans-town. Frisch however had in 1739 figured it from an example obtained in Brandenburg.

This bird is unknown in the Færoes, Iceland or Spitsbergen. On the continent of Europe it breeds, as just stated, in Lapland, arriving there at the end of April or beginning of May and departing in autumn; but outside the Arctic Circle it is in Scandinavia still accounted rare, being seldom seen, and that only in winter, in the southern parts of Norway or Sweden as well as in Denmark. It has been obtained in Heligoland, and in North Germany, especially on the coast, it is observed almost every year. It occasionally visits Holland and Belgium, and has been met with several times in France, most often in the north but sometimes it pushes its flight even to the shores of the Bay of Biscay and of the Gulf of Lyons as in Guyenne and Provence, in which last some half dozen examples have been taken. It has also occurred about as often in Italy, chiefly in the north, but once so far as Naples. In Central Europe its appearance is very uncertain and dependent apparently on snowy winters, but it has occurred in Switzerland and Tyrol, as well as in Baden, Würtemberg and Bavaria. Mr. Danford informs the Editor that it is abundant in Transsylvania in hard weather, but north of Bohemia and the great Carpathian range it would seem more regular in its visits. It is found throughout the greater part of European Russia, but not very commonly, and it has not been recorded from the Crimea, though it reaches Bessarabia, and Mr. Robson, according to Messrs. Elwes and Buckley, has met with it on the hills near Constantinople. It seems to inhabit the whole temperate zone of Siberia from the Ural to Kamchatka occurring also in the Kurile Islands but not in Japan though it has been obtained in North China.

In the New World are found two if not three races of this bird, which have been described as constituting so many species, but the most recent transatlantic authority regards them in the former light. Trusting then to the determination of Prof. Baird in his latest work (North American Birds, ii. pp. 140–144), we may consider these races specifically identical with our own Shore-Lark, and there is no need to enter into any details as to the differences of the typical *Otocorys alpestris,* which is found in the arctic and subarctic portions of America, of the *O. occidentalis* of its interior northern prairies, and of the *O. chrysolæma* of the more southern plains, the table-lands of Mexico and the mountain-chains of New Granada*. Whether indeed this bird breeds so near the equator as the countries last named does not yet appear—the fact is sufficiently surprising that it should do so from Arizona to British Columbia on the west and to Labrador on the east, though it must be understood that the wooded and cultivated tracts intervening in each case are to be excepted. The Shore-Lark has apparently not so high a northern range in America as in Europe: a single example only was obtained by Mr. Dall at Fort Yukon (lat. 66°) while but three were seen by Ross at Felix Harbour (lat. 70°), and a solitary specimen has been recorded from Greenland.

Pursuing our bird in North America, Richardson says that it "arrives in the fur countries along with the Lapland Bunting, with which it associates, and, being a shyer bird, is the sentinel, and alarms the flock on the approach of danger." It appears on the shores of Hudson's Bay in May, and proceeds thence still further north to breed. But Audubon found it, as Dr. Coues has since done, breeding also on the high and desolate tracts of Labrador near the sea, and has given a pleasing account of its manners as observed by him. It arrives here early in June: the cocks are very pugnacious and so jealous of their mates that the sight of one of their own sex excites them to battle, and no sooner does an encounter between two begin than the fray is joined by others who close, flutter, bite and tumble over as House-Sparrows in Europe do on like occasions. The several pairs do not breed near each other. The nest is imbedded in a patch of moss and here, though not in Lapland, is said to be lined with feathers—those of the Grouse especially. The eggs are laid at the beginning of July, and the hen, while sitting, so closely resembles the moss in hue that she may be nearly trodden upon before she will stir. When disturbed, however, she flutters away, feigning lameness so cunningly as to deceive almost any one not on his guard, and is then immediately joined by the male who utters a soft and plaintive note. The young quit the nest before they can fly, and running nimbly follow their parents by whom they are fed for about a week. Only one brood is here said to be reared in the season. By August many of the young are fully fledged, and the different broods associate to the number of fifty or more. They then remove to the neighbouring islands, and early in September depart for the south, starting at dawn and flying near the water in so straggling a way that they can be scarcely said to move in flocks. Other observers have described the manners of this bird in the interior of North America almost as minutely, but to quote their remarks would be merely to repeat much that has been already given. The nature of the district induces some slight change of habit—for instance Nuttall on the plains of the river Platte found the nest lined with coarse bison-hair, but this change is generally unimportant.

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* The southward extension of *Otocorys* here as well as in the Old World will perhaps some day be recognized by geologists among the proofs of the former prevalence of a glacial epoch.

The food of the Shore-Lark consists of grass-seeds, the blossoms of dwarf plants, and insects. It is an expert catcher of flies, following them to a considerable distance, and now and then betaking itself to the sea-shore to search for small mollusks or crustaceans.

The adult male has the bill bluish horn-colour, paler at the base of the lower mandible: the irides hazel: the lores and cheeks, deep black; the ear-coverts, a streak over each eye and the forehead yellowish-white; a broad black band crosses the top of the head, and ends on each side in the tufts of long, pointed and erectile feathers, characteristic of this genus; the rest of the head, the nape, mantle and upper tail-coverts, delicate pinkish-brown, each feather being rather darker along the shaft than near the edges; the smaller wing-coverts almost of the same hue but with white tips; the back, the greater wing-coverts and tertials hair-brown, with lighter margins; primaries and secondaries hair-brown, with very narrow lighter edges, and the outer long primary (which in this genus is the second) with a distinct white outer margin; the two middle tail-feathers hair-brown, with lighter margins, the others pitch-black, except part of the edge of the outer web of the outer feather on each side, which is white; chin, throat and sides of the neck, yellowish-white; front of the neck with a gorget of deep black; the breast, belly and lower tail-coverts, nearly pure white; flanks tinged with pinkish-brown; legs, toes and claws, bluish-black. This is the plumage of summer. In winter, the black on the crown of the head, on the cheeks and chest, is more indistinct, and the white markings on the head are more deeply tinged with yellow.

The whole length of the male is about seven inches, but there is some individual variation. From the carpal joint to the tip of the wing, four inches and a quarter: the first primary, as already stated in the generic characters of this group, is exceedingly small, the outermost long feather of the wing being the second; this is a trifle longer than the third, which again is longer than the fourth, while the fifth is decidedly shorter; but in many of the examples obtained on our coasts, being birds of the year with their wings not fully grown, this order is not observed.

The female is rather smaller, and wants the black band and horns on the top of the head, that part being only a little darker than the rest; the lores and cheeks are mottled with black; the pink tinge of the upper parts is much less perceptible; the chin is of a dull yellow, the black gorget is smaller, duller and mottled, and the lower parts are of a dirty white.

The young male of the year, after the first moult, resembles the adult female.

The nestling has the bill and legs of a dirty flesh-colour: the lores and sides of the head mottled with black and straw-colour; the whole upper plumage dark brown, each feather edged with ochreous; the throat pale primrose-yellow with black, lanceolate streaks; the breast and lower parts dull ochreous-white, deepest in hue on the flanks. In this stage the bird nearly resembles the more typical Larks.

This species was originally separated from the genus *Alauda* in 1828 by Friedrich Boie, under the name of *Eremophila;* but *Eremophilus* having been previously applied to a genus of fishes by Humboldt, that name was, according to usage, dropped, and the eldest Brehm, in 1831, proposed instead *Phileremus* — a name equally objectionable since Latreille had already established it as that of a genus of insects. Bonaparte's *Otocorys* therefore stands, though there is some doubt as to the year in which it was first applied*.

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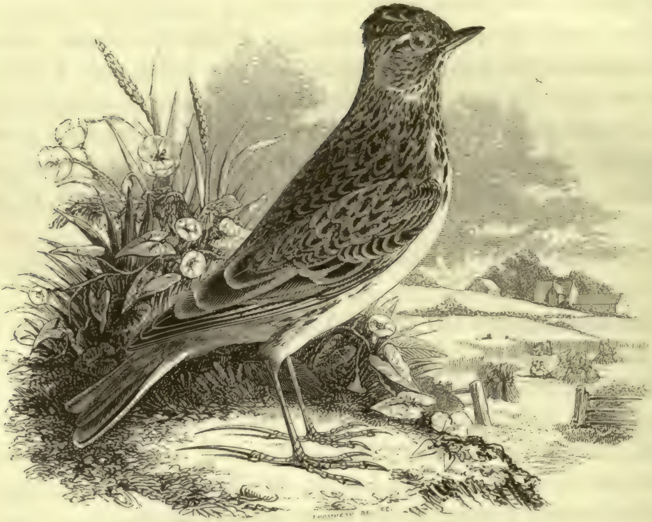
* Bonaparte and G. R. Gray after him assign 1839 as the date, but the earliest use of the word appears to be in the Introduction to the former's 'Fauna Italica' as above cited (page 604, note), and this from internal evidence must have been written after Keyserling and Blasius's 'Wirbelthiere Europa's' which bears date 1840.

PASSERES. *ALAUDIDÆ.*



Alauda arvensis, Linnæus*.

THE SKYLARK.

Alauda arvensis.

Alauda, Linnæus†.—Bill rather long, slightly compressed at the edges, upper mandible more or less arched from the middle and without notch. Nostrils basal, oval, covered by bristly feathers directed forwards. Gape straight. Head with feathers on the occiput elongated and forming a decided crest. Wings long: first primary short but unmistakably developed; second, third and fourth nearly equal, but the third longest; secondaries and tertials comparatively long and emarginate at the tip, the latter about as long as the sixth primary. Tail moderate and slightly forked. Tarsus blunt and scutellated behind as well as before, longer than the middle toe; claws slightly curved and moderate, except that of the hind toe which is greatly elongated and nearly straight.

The Skylark is so abundant, so well known and so universal a favourite, as to require little more than a general reference here to the points of greatest interest in its history. It is an inhabitant of all the countries of Europe, preferring cultivated districts, and particularly arable land. Here in early spring its cheerful and exhilarating song, fresh as the season, is the admiration of all. The bird rises on quivering wing, almost perpendicularly, singing as he flies, and, even after gaining an extraordinary elevation, so powerful is his voice, that his wild, joyous notes may be heard distinctly when the pained eye can trace his course no longer, but an ear well tuned to his song can yet determine by the notes whether he is still ascending, stationary or on the descent, for the strain is continued on his downward course till he approaches the ground, when it stops abruptly, and with a headlong dart the bird alights. The appearance of a Merlin also will cause the sudden cessation of the song—at whatever height the performer may be, his wings are closed and he drops to the earth like a falling stone; the Kestrel, however, is treated with indifference, and in the presence of a Sparrow-Hawk the Skylark knows that safety is to be sought aloft. Occasionally he sings when standing near his mate, or more rarely when perched on a bush; but his most lively strains are poured forth during flight, and even in confinement this "scorner of the ground" tramples his turf and flutters his wings while singing, as if muscular motion was with him a necessary accompaniment to his music*.

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* Syst. Nat. Ed. 12, i. p. 287 (1766).

† *Loc. cit.*

The Skylark is one of our most popular cage-birds, from the ease with which its health is preserved in captivity†, and the general sprightliness of its song; yet the notes are more remarkable for variety and power than for quality of tone; what is wanted in quality is, however, made up by quantity; the strains are heard during at least eight months of the year, while in summer the cock begins to sing about two hours before sunrise, and continues at intervals till after sunset*. The actual duration of each song is, however, much shorter, even in calm weather which is most favourable to it, than most people think. The careful observations of Hepburn and Weir given by Macgillivray (Brit. Birds, ii. pp. 472, 480) shew that at the beginning of the season it seldom exceeds two minutes, while in the full flush of spring a quarter of an hour is its utmost limit—facts of which any one taking the trouble to time the bird may assure himself.

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* Mr. W. P. Foster of Hackney, who was very successful in inducing this bird to breed in confinement, informed the Author that during the period of producing the eggs the female has been heard to sing with a power and variety of tone equal to her mate, but the Editor is not aware of any other authority for such a statement though Bechstein says that she will at times utter a few bars.

† Several cases are known of Skylarks living nineteen or twenty years in captivity, and many instances of their breeding in confinement are recorded. Much has been written against the practice of caging this bird, and no one has more strongly expressed his detestation of it and his pity for the imprisoned "Ariel of song" than Broderip (Zool. Recreations, p. 18); but the question has two sides. We should not, as Thompson well observes (B. Ireld. i. p. 233), "*think only of the skylark.*" How numerous are the poor artisans in our crowded towns, the bedridden sufferers, who from one year's end to another would never enjoy the delight, in many cases the solace, of hearing its song did

The food of the Skylark is various seeds, including corn, sometimes a few berries, with many insects and worms. It pairs early in the year, the exact time being much influenced by the state of the weather, and generally, at least in our southern counties, produces several broods in the course of the season. The nest is placed on the ground, usually in a hollow formed by the bird itself, and often two or more such hollows are made before one is found to its liking: the shelter of a tuft of grass or a clod of earth is also frequently sought. Grahame, in his 'Birds of Scotland,' has well contrasted the lowly situation of the nest with the lofty flight of the builder:

> —"Thou, simple bird,
> Of all the vocal quire, dwellest in a home
> The humblest; yet thy morning song ascends
> Nearest to heaven."

The nest is, in the same poem, thus truly described:

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they not keep one to cheer the long hours of toil or pain! Few birds are so readily domesticated. The store their owners set on such captives ensures their good treatment, and it is notorious that a mutual affection nearly always exists between the two. If it be a crime to deprive any animal of its liberty under any circumstances, the position advanced by the writers referred to is of course unimpeachable, but if otherwise there seems to be no valid reason for exempting the Skylark from that taming process which even an Apostle does not blame.

* In places near Thetford where the Ringed Plover is common Skylarks often imitate the note of that bird, making it part of their own song.

> "The daisied lea he loves, where tufts of grass
> Luxuriant crown the ridge; there, with his mate,
> He founds their lowly house, of withered bents,
> And coarsest speargrass; next, the inner work
> With finer, and still finer fibres lays,
> Rounding it curious with his speckled breast."

The eggs, from three to five in number, are subject to a good deal of variety: the ground-colour is french-white, but generally so obscured by a freckling or numerous small blotches of olive-brown or hair-brown that little else is visible; sometimes patches of pale lavender are also present and occasionally the ground-colour is greyish-white, in which case the mottling is usually of a dull reddish-brown and the whole egg has a warmer appearance, but still more abnormally-coloured eggs are not unfrequent. They measure from ·99 to ·87 by from ·73 to ·62 in. The young are hatched in about fifteen days, and those of the first brood are fledged by about the middle of May. The attachment of the parents to their offspring is very strong and many instances are known of their removing the eggs or helpless young under the fear of impending danger, or when any one has meddled with the nest, though the act of transfer has been but seldom witnessed. Jesse indeed was informed by a friend that he had observed it on one occasion, but then it was not successful, for the old bird in its flight dropped the young one it was carrying in its claws, which was thus killed by the fall from a height of about thirty feet. Not always however is resort had to this expedient. Blyth (Nat. 1837, p. 102) describes a case of which he was told wherein the upper part of a Skylark's nest having been shaved off by the scythe, and the surrounding grass levelled by the mowers, without the female, who was sitting on her young, flying away, she was found about an hour afterwards to have constructed a dome of dry grass over the nest during the interval; thus securing, as in the case of the Meadow-Pipit already mentioned (pages 577, 578), a continuance of shelter.

Skylarks constantly, and with evident delight, dust themselves, especially in sunny weather, scratching a slight hollow in the ground, shuffling and rubbing their bodies against its sides, while they set up their plumage and, by a peculiar action of the legs and wings, throw the fine and dry soil over every part, so that it penetrates to the skin through the ruffled feathers. This is done in order to rid themselves of insect-parasites. Though living in pairs during spring and summer, Skylarks are gregarious in autumn and winter, assembling in vast flocks on the open country soon after the stubbles are cleared,* and flitting from field to field in quest of food—the flocks of home-bred birds being often increased by arrivals from abroad as the weather becomes severer. Mr. Woolnough, of Hollesley on the coast of Suffolk, remarked (Trans. Linn. Soc. xv. p. 22) that he had for several years frequently seen them come flying from off the sea, from five to fifty in a flock, for many hours on the same day, and that he once observed this in November for three days in succession. The like has been witnessed by others, as by Mr. Lubbock and Mr. Dowell, on the coast of Norfolk, while St. John writes that in Moray, during the first days of snow and storm a constant immigration of Larks takes place, the birds arriving from seaward during the whole day, and being frequently heard after dark, not in compact flocks but straggling in a constant stream. In the northern parts of England the first heavy fall of snow, by overwhelming the supply of food, impels a general departure for the south. Mr. F. Boyes, writing from Beverley, says (Zool. s.s. p. 2640) that one evening in December, 1870, when the ground was becoming thickly covered with snow, he noticed the Larks flying quickly with shrill cries of alarm in different directions and in an unsettled manner, while next morning, as soon as it was light, they were seen, in numbers simply incalculable, steering their course directly southwards, forming an almost continuous stream which lasted for hours, indeed, so far as he could judge, for the whole day. "The birds", he continues, "made little noise while passing overhead, but seemed bent only on leaving the districts whence they had come as quickly as possible". In like weather Mr. Corbin too, in the south of Hampshire (Zool. s.s. p. 3647) has noticed this species migrating in countless hundreds from north-east to south-west. "They flew comparatively low," he says, "and their only business seemed a hasty retreat to a more congenial and hospitable neighbourhood. They made little noise during their journey, but their numbers must have been unlimited, as they were passing the whole of the day, and even in the evening twilight I could still detect the migration going on." Montagu remarks that in the winter of 1803 the number seen in the south of Devon was far beyond anything that appeared in the course of the next ten years, and Mr. Murray Mathew (Zool. p. 7381) tells how that at Christmas 1860 flock after flock resorted to Lundy Island in a severe frost. Perhaps the earliest record of their vast congregations in this country is that given by Fuller in his well-known 'History of English Worthies' (London: 1662, part i. p. 273) wherein he mentions the great wonder of an incredible number of Larks, "for multitude like Quails in the Wildernesse", that visited the city of Exeter during its siege by the Parliamentarians in the cold winter of 1645–46, which birds, "by their safe digestion into wholesome nourishment", whereof he says he was "an *eye* and *mouth* witness", contributed to the resources of its defenders, "providing a *Feast* for many poor people, who otherwise had been *perished* for *provision*." "I will save my credit", he adds, "in not conjecturing any number; knowing, that herein though I should *stoop* beneath the *truth*, I should *mount* above *belief*". The greatest proportion of the Skylarks that thus throng to our southern counties no doubt steadily pursue their way, so far as they are permitted,* to foreign shores, but it must not be supposed that all leave us in the winter. On the contrary a good many stay with us through hard frost, but even these perform a partial migration, repeatedly shifting their haunts according to the state of the weather, and at this time they do a considerable amount of damage to the autumn-sown wheat, if the ground be free from snow, and to such green crops as they may find.* The return of the emigrant hosts in spring has been noticed, but not by many observers, and doubtless there are comparatively few survivors of the perils of the outward voyage.

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* Near Brighton, says Mr. Rowley, the "flight" occurs on the 18th or 19th of September.

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* The extension of the electric telegraph has of late added to the dangers of migration. Mr. Gray mentions his having seen near Girvan the passage of a flock of Larks across a line which was accompanied by the destruction of dozens, and the Editor has frequently noticed a Lark's wing hanging to the wires.

In the literature of our country the Skylark unquestionably holds the foremost place. There is hardly a British poet or poetaster who has not made it his theme, and a volume might be filled with extracts describing or alluding to its habits, its marvellous power of song especially, while, from the prevalence of the species and the way in which it thrusts itself on observation, these passages are generally far more truthful than most productions of a muse-inspired fancy. Several gifted writers of prose have equally celebrated the Skylark's qualities in words not less expressive and beautiful, but to the multitude there is perhaps another reason why it is the one of the best known of the feathered tribes. From the number of male Skylarks sold for cage-birds and the high price which the best songsters among them command, various means are used to entrap them, yet it is rather the excellence of the species for the table, its abundance and the ease with which it is taken that form the great incentive to the Lark-catcher. Out of the vast flocks which as already mentioned assemble in autumn, thousands are caught by dragging nets over the stubbles and fallows at night, and by day even more are enticed by a call-bird within the reach of clap-nets. Hundreds are also snared in time of snow; while, during the "flight", scores are uselessly shot, attracted by a piece of wood beset with bits of looking-glass, and made to revolve rapidly. The glittering of this simple engine is perhaps, as Mr. Knox has suggested to the Editor, mistaken for the gleam of running water by the birds; but whether this be the right explanation of the matter or not, the fatal result of the fascination thereby exercised upon them is undeniable. At this time they are lean, but soon after, and even during moderate frost, they are in good case, the cold possibly checking cutaneous transpiration, and inducing a deposit of fat; though should long-continued and severe frost supervene, or snow cover the ground, the condition of those that remain with us is soon altered for the worse; but even in the hardest of times a few seem to pick up a living, albeit they may have to settle in the streets of towns to find it, as, according to Gilbert White, they did in the remarkable frost of January 1776.*

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* The silly practice of destroying Larks by means of poisoned grain scattered over the fields, which a few years ago was becoming general, has been very properly stopped by the legislature. At that time of year it could have no appreciable effect on their numbers, and was either dangerous to human life or else a mere waste of good food, for the birds had far better have been netted and eaten.

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* Dunstable was formerly famous for its Larks for the table. In England these birds are commonly eaten after being simply roasted, but in France such plain cookery is deemed insufficient. *Patés de mauviettes* (for which see M. Jules Gouffé's 'Livre de Patisserie', p. 76) have been made at Pithiviers for over three hundred years, and though these, from their name, would seem to have been originally composed of Thrushes, Larks have long been almost exclusively used for the purpose. Nowadays the main stream of northern traffic having been diverted from Dunstable, where Pennant a century since put the yearly capture at 48,000, its fame rather rests on its straw-work than its Larks, and perhaps Brighton enjoys the credit of consuming more Larks than any other place in England except London. Dr. Wynter, in 1854, estimated those annually entering the metropolitan markets alone at 400,000—20,000 or 30,000 being often sent together, and the numbers eaten elsewhere in the country must be enormous, quite as large indeed as abroad. The Editor has been obligingly informed by Messrs. Baily and Son, the eminent poulterers of Mount Street, that the bulk of those forwarded to London is worthless, and consequently the average price cannot be put higher than 1*s.* 3*d.* the dozen, which however would produce from Dr. Wynter's estimate more than £2,000 *per annum.* Mr. Gray quotes an official return of the authorities at Dieppe stating that, during the winter of 1867-68, 1,255,500 Larks were taken into that town, the value of which in English money may be reckoned at £2,260. In the German towns Larks are or were subject to duty which Latham, quoting Keysler, says used to produce at Leipzig, where it was 2½*d.* on 60, above £900 a year, shewing that 5,184,000 were annually received in that city. Stupendous as is this number, it is rendered more credible by Bechstein's statement that 404,304 Larks were brought thither in one month of the year 1720, and Naumann says that the excise lists shew that over 500,000 Larks were, when he wrote (1824), supplied to the same place in the month of October. These are chiefly caught in Anhalt or near Halle, Merseburg and other open parts of Saxony, while even more were sent to Berlin, Hamburg and elsewhere than to Leipzig, besides those that were consumed in the small towns of the district. The Editor is informed by Dr. Baldamus that chiefly through his efforts this traffic has almost ceased within the last few years.

Yet few if any birds maintain their stock better. They thrive as the farmer thrives by the spread of agriculture, and, in spite of the harm they undeniably do for a few days or weeks in the year, render him on the whole much service. Breeding in his growing crops they are in a great measure secure from all molestation at what is the most critical period in the life of a species,* and there can be little doubt that over the western half of Europe the Skylark must be the most numerous bird as from a commercial point of view it is one of the most valuable.

The Skylark is universally distributed in the British Islands, but as already said a large portion leave us in winter, and this is chiefly observable in the more northern parts of the kingdom. According to Thompson it has been repeatedly seen migrating from Scotland to the North of Ireland, and in Shetland it is almost entirely absent for many weeks. In the Færoes it arrives sparingly in spring and a few pairs breed there, but large flocks appear towards autumn. It has not been recorded from Iceland. In Scandinavia generally it is an early summer-visitant, and reaches, though rarely, as far as lat. 70° N.; in most parts of Germany it bears the same character, but a few pass the winter in sheltered spots, and especially in the valley of the Moselle and the Rhine†. It is abundant throughout the temperate parts of Russia and Siberia, where, according to Pallas, it does not flock in autumn but migrates almost singly. Steller observed it not only in Kamchatka but also in the Kurile Isles and in some of those lying between Asia and America. It also occurs in winter in North China, and has long been known (though at first described as distinct under the name of *Alauda triborhyncha*) from Bhotan and Nepaul, while lately it has been obtained by Capt. Marshall near Lahore. It inhabits or at least occurs in Persia, and large flocks visit the sea-coast of Palestine in winter. In Northern Arabia and in Lower Egypt it is of occasional occurrence at the same season, and in parts of North-western Africa it is not only very common at that time of year, but Canon Tristram found it remaining to breed on the southern slopes of the Atlas. It sometimes strays to Madeira, and one was shot in Bermuda, 12th June 1850, by Mr. Hurdis, though whether the example had been imported or not seems doubtful.* Throughout Europe generally it is almost everywhere abundant, and, though some breed in Southern Spain, it is chiefly known as a bird of passage or at least a winter-visitant in the countries bordering the Mediterranean. Near Naples, according to Rafinesque as quoted by Prof. Doderlein, a million of Larks will pass in a single day at the time of the greatest flight, and in Italy from one end to the other its capture seems to be the object of as many contrivances as in Germany and elsewhere. Whether there is not also a second allied species in the South-east of Europe is a point which the Editor will not take upon himself to decide, any more than the name, whether *Alauda cantarella* or *A. intermedia*, which that species should bear; but the supposed *A. agrestis* of Germany, differing in its smaller size, shorter bill and hind claw, seems hardly to require recognition. In coloration English Skylarks vary a good deal, and, according to Blyth (Mag. Nat. Hist. Ser. 2, i. p. 135, note), this variation depends to some extent on the soil they frequent, while abroad it is still more perceptible—Portuguese examples, for instance, being exceedingly dark in colour, and accidental varieties—white, cream-coloured, buff and even sooty-black are far from uncommon everywhere.

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* Of course some nests are destroyed every year by horse-hoes and such like implements, but the little hollows which the birds generally take care to make save most of the early broods, while the later nests are unscathed.

† Mr. Gätke informed Mr. Cordeaux that during the night of Nov. 6th, 1868, 15,000 Larks were caught at Heligoland, of which 3,400 were taken before half-past nine o'clock in the evening (when the moon rose) as they beat against the glasses of the lighthouse.

The bill is dark brown above, with the edges of the upper mandible yellowish-brown, the lower mandible livid flesh-colour, yellowish at the base: irides hazel: the lores and a stripe over each eye pale ochreous, ear-coverts reddish-brown with dark streaks; top of the head and upper parts generally varied with three shades of brown, the darkest of which is glossy and lies along the shaft of each feather, and then becoming tinged with rust-colour passes into light yellowish-brown at the margins, some of the feathers, especially on the occiput and mantle being also slightly tipped with white; the light borders of the wing-coverts and tertials are broader and tinged with rufous, while in them the darker shade is less apparent; the coverts of the primaries creamy-white; the primaries and secondaries dusky brown outwardly edged with rust-colour, the outer margin of the outer primary being very pale; the tail dark brown, the middle pair of feathers broadly edged with a lighter shade, the outer pair having the whole outer and great part of the inner web white; the next pair with nearly all the outer web white; the whole lower surface pale yellowish-white, tinged with brown, the throat and sides of the neck with dark brown, lanceolate spots, which becoming larger and thicker form a gorget just above the breast, the sides of the body and flanks tinged with rufous and streaked with dark brown: the legs and toes yellowish-brown; the claws dusky.

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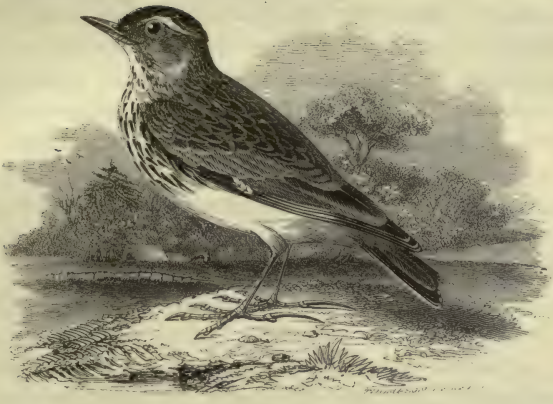
* Some years since an attempt was made to introduce the Skylark to the United States of America, and several were liberated on Long Island. Writing in 1874, Prof. Baird (North American Birds, ii. p. 136) hopes that the species has now made good its foothold in that country.

The whole length of the male is seven inches and a quarter, from the carpal joint to the tip of the wing, four inches and a half; the second primary a little shorter than the third.

The female is a little smaller than the male, and, according to Mr. Stevenson, rather narrower across the shoulders, so that expert Lark-catchers can even in the dark distinguish the sex of the birds by handling them.

Broad edgings to the great wing-coverts, and a black spot with a white tip at the lanceolate ends of the smaller coverts, bespeak the young bird: these markings are lost at the first moult, which begins in August.



Alauda arborea, Linnæus*.

THE WOODLARK.

Alauda arborea.

The Woodlark is readily known from the Skylark by its smaller size, its shorter tail, its more distinctly marked breast and by a conspicuous light-coloured streak over the eye and ear-coverts. It is nowhere plentiful as a species; and in many parts of this country it is not found at all, though there is reason to think it is often overlooked by careless observers. Seldom if ever frequenting during the breeding-season land that is under tillage, it occasionally betakes itself to such at other times of the year in those districts where it is not migratory. Yet it shews a very considerable diversity in its choice of locality, resorting in one part of the country to wooded parks or hedge-bound meadows interspersed with copses, while in another it will be found only on dry sheep-walks and the borders of heaths, but the vicinity of trees seems in all cases to be indispensable. The explanation of this preference is doubtless simple, but at present none can be attempted, beyond its possible connexion with the fact that this species feeds less on seeds than most of its family, for the Woodlark's habits have hitherto been very insufficiently studied, and even its distribution throughout the British Islands cannot, for want of materials, be precisely set forth. It is emphatically a local bird—in the spring and summer hardly straying two hundred yards from the spot which it has selected for its nest, and at all times except when in the act of migration restricting itself to some particular place, where year after year it may be observed at the proper season. Perhaps the best account of the species, the writer's whims apart, is that given by Neville Wood (British Song Birds, pp. 259–271), but his observations only refer to Derbyshire, and do not apply to some other parts of England, where its habits, in several respects, are very different. He describes it as being resident throughout the year, and most easily observed in winter on account of the nudity of the trees at that season, when it becomes particularly lively, assembling in small flocks and haunting the outskirts of woods in low and sheltered, but not marshy, spots. During the cold weather it keeps very close and may be seen diligently seeking its food beneath the trees or bushes, but a gleam of sunshine disperses the band, and it may then be met with alone or in pairs on the high ground and the arable lands, while with the return of frost it reassembles as before. Early in March it again disperses and during the spring and summer it partakes equally of ground and woodland habits, but it is at all times, says Wood, a shy species and one with which intimate acquaintance is not easily made. In the western part of Norfolk and Suffolk, about Thetford, the Woodlark is not uncommon, but there it is strictly migratory, appearing very early in the year with the first decidedly open weather, and remaining until August when it ordinarily departs, though occasionally a few examples may be seen in autumn. In this district it is almost exclusively limited to certain spots of light soil which are close to old plantations of Scotch firs, and from the partiality shewn to such localities it may perhaps be rightly inferred to be but a comparatively recent colonist, since trees of this kind cannot have been planted there for much more than a century, and the bird, though seldom using them as a perch, is scarcely ever to be seen far from them. Montagu remarked that it was more common in Devonshire than in any other part of England, and especially so in winter, thus indicating that the species sought southern quarters at that season, as has since been proved to be the case, for though not numerous enough to form anything like the enormous hosts that the Skylark does, Mr. Knox has noticed it congregating during severe frosts in vast flocks on the coast of Sussex, and in the cold winter of 1866-67 especially these flocks seem to have been exceptionally large both in that county and in Kent (Zool. s.s. pp. 705, 756, 792). But however diversified are the Woodlark's habits, all observers will agree in admiration of its song. Though its voice has neither the variety nor the power of the Skylark's, it is superior to that in quality of tone, and by many people preferred accordingly. The duration of each song is longer even than in the Skylark, and the Woodlark sings for quite as many months in the year—indeed the period of moulting seems to be the only time when it is absolutely silent. Sometimes uttered from a perch on the upper branches of a tree, its soothing notes never sound more sweetly than while the performer is mounting in the air by wide circles, or having attained the summit of its lofty flight is hanging almost stationary overhead. Yet the strain which accompanies the spiral descent is hardly inferior and the quavering call-note of both sexes is equally musical. There is also a plaintive character in the song of the cock, which is second only to the Nightingale's and, like that bird's, is said also to be heard in hot summer-nights as

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* Syst. Nat. Ed. 12, i. p. 287 (1766).

"High in air, and pois'd upon his wings,
Unseen, the soft, enamour'd Woodlark sings."

The nest is built in a depression of the ground, sheltered by a low bush, or a tuft of grass; or if the herbage be scanty, as it often is in places frequented by the bird, wherever the bents grow thickest; but it may be placed on turf that is as smooth as a well-kept lawn, or in a clump of heather, while Neville Wood has seen it on the stump of a felled oak: it is formed externally of coarse grass with a little moss, lined with finer bents, and is more compact than most Larks' nests. The eggs are four or five in number, measuring from ·9 to ·74 by from ·67 to ·58 in., of a white or white with a faint tinge of green, finely freckled and blotched with hair-brown and patches of lavender, the markings being often bold and sometimes collected in a zone. Nidification begins early in the year and the first eggs are often laid by the middle of March. As soon as these birds are hatched and the young flown, a second nest is prepared usually near the first, and later in the season a third, or perhaps in some cases even a fourth, brood is produced. In East Anglia the young of the earlier hatches totally disappear on leaving the nest, and what becomes of them has hitherto defied the scrutiny of the Editor and his brother, who formerly gave much attention to the pleasing habits of this species; but those of the last brood seem to emigrate with their parents from that district soon after they are fit for flight, and from the evidence of observers in other parts of the country would seem to keep together in a family-party through their first winter, being seldom seen in larger flocks. The food of this species in summer consists almost entirely of insects, but later in the year small seeds are also sought, and in spring the tender leaves and sprouts of various plants are added.

Though not distributed generally the Woodlark is known to breed in particular spots throughout the southern parts of England as far as Buckinghamshire and Oxfordshire, becoming perhaps more common in the western midland counties from Gloucestershire to Staffordshire. It also frequents certain localities both in South and North Wales. Its restricted range in the eastern counties has been already sufficiently noticed and it seems to breed but rarely from Bedfordshire northwards, with the exception of Derbyshire, the east riding of Yorkshire, South Lancashire and Westmoreland. Its precise limits however cannot be given and it is sometimes found as a straggler in other counties. Crossing the border its distribution is still more difficult to trace systematically. Indeed it has but recently been fully recognized as a Scottish bird, though long ago observed, according to Heysham, near Dumfries and, from the evidence adduced by Mr. Gray, in other places; but Torwood in Stirlingshire, where its nest has been taken by Mr. Harvie Brown, seems to be the only locality in Scotland in which it is known to breed, though it has been met with in various scattered spots from Ayrshire in the south-west to Caithness in the north-east. It has also been once killed in Orkney and is, according to Mr. Gray, believed to have occurred in Shetland. In Ireland it is resident but also a very local species, almost confined in the north to some districts of the counties Antrim, Down and Armagh. Mr. Blake-Knox notices it (Zool. s.s. p. 2018) as a very abundant winter-visitant to and also breeding in the county Dublin, while it is also found in Wicklow, Waterford and Cork. Thompson connects its appearance in Ireland with places "where the soil is warm" and adds that "cold clay districts," though cultivated and sheltered, cannot, so far as known to him, "claim it for a tenant." Whether its sparse distribution in Great Britain can be satisfactorily explained on some similar grounds awaits further investigation.

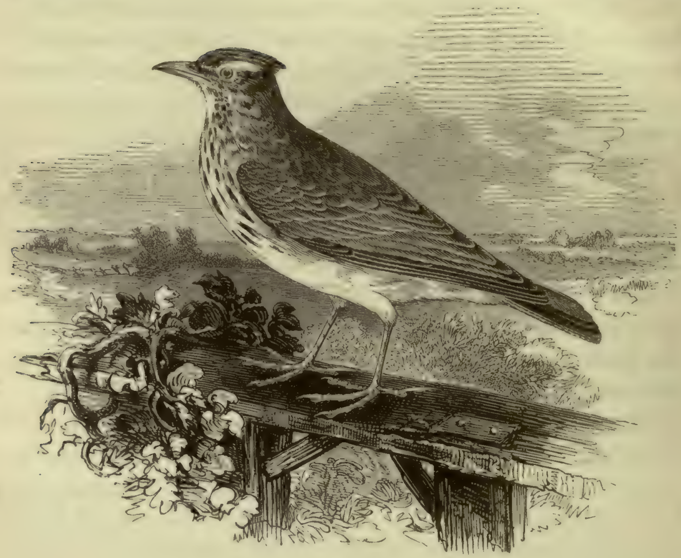
Northward in Europe its range does not extend far. It is tolerably common in the extreme south of Norway where, as well as in the south of Sweden, it is a summer-visitor, but it has not been known further north than Gefle in the latter country. In Denmark it is not common and apparently breeds only in Jutland, though occasionally observed elsewhere in its migration. It is equally uncommon in North Germany, appearing early in the spring on the more lonely wooded and heathery districts, but Bernhard Meyer says it is not rare near Riga. A few are said to appear every year in Finland and to breed in that country. Herr Meves observed one near the south shore of Lake Ladoga, and in Russia it seems not to go further northward than the Government of Vologda, nor to cross the Ural eastwards. On the coast of the Black Sea it is said to be rare, but is common in winter in Turkey and Greece, where a few also stay to breed. Strickland found it common near Smyrna at Christmas, Messrs. Dickson and Ross procured a single example at Erzeroom in spring, and it is not uncommon in Palestine, where it remains throughout the year. Dr. A. E. Brehm says it visits Lower Egypt, but no one else seems to have observed it there. Loche found it in Southern Algeria, but it would appear to be rare as Dr. Taczanowski only saw a single example (Journ. für Orn. 1870, p. 41) and English travellers in that country do not mention its occurrence. Major Irby informed Messrs. Sharpe and Dresser that it occurs during winter near Tangier. In Portugal and Spain it is local and not abundant, even in the spring when it is most numerous. In France it would seem to be more plentiful, but there as in England it is migratory or resident according to local influences, and the same may perhaps be said of its conduct throughout the rest of Europe.

The upper mandible of the bill is dark brown, the lower one pale yellow-brown: the irides hazel: the lores, a line below each eye and the upper half of the ear-coverts, dusky; the lower half of the last rufous; over each eye runs a distinct yellowish-white stripe, which meets its fellow at the back of the head; the top of the head, mantle and back, dark brown, each feather bordered with wood-brown, tinged in some parts with rufous; upper tail-coverts and lesser wing-coverts plain mouse-colour; the larger wing-coverts and tertials dark brown, edged with light rufous-brown, which on the latter extends from the tip up the shaft in a triangular patch; upper series of coverts of the primaries white, and lower series blackish-brown broadly tipped with white on the outer web; primaries and secondaries dark brown, with a narrow light outer border; tail dark brown, the two middle feathers broadly edged with mouse-colour, the outer pair becoming light greyish-brown towards the distal end, the three next pairs with a distinct triangular patch of white at the tip largest in the outermost and smallest in the innermost; the entire lower surface dull white, more or less tinged with straw-colour; the throat and sides of the neck with dark brown arrow-headed spots, which becoming thicker and larger form a gorget just above the breast; the sides of the body and flanks tinged and streaked with brown: legs, toes and claws light brown; the hind claw straight, and half as long again as the hind toe.

The whole length of a male bird is rather more than six inches. From the carpal joint to the tip of the third and longest primary three inches and three-eighths: the second, fourth and fifth primaries nearly as long as the third.

The female is rather smaller than the male: the young have the upper parts more rufous, especially the borders of the feathers, which are also tipped with light buff, giving a distinctly spotted appearance to the bird.

The Woodlark by its slender bill and short tail stands alone among Larks. It is the type of the genus *Lullula* of Kaup, but there seems to be no real need of separating it from *Alauda*.



ALAUDA CRISTATA, Linnæus*.

THE CRESTED LARK.

Alauda cristata.

A LETTER recording the occurrence of this species in Ireland, appeared, with a characteristic woodcut, in the 'Dublin Penny Journal' of February 27th, 1836 (iv. No. 191, p. 276). The writer, who gave as the only clew to identification the initials "W. R.," stated that a few weeks before he had killed, near Taney, in the county Dublin, the bird then figured, which he partially described and determined to be the *Alauda cristata* of naturalists, adding that he was convinced he had frequently met with others near Dublin. According to the wholesome rule which enjoins upon naturalists the disregard of anonymous statements as to fact, this communication not being authenticated by the writer's name might well have been passed over, but since it has been quoted in most recent works in British ornithology, it is here left to stand for what it may be thought worth. In like manner the assertion, made in former editions of this History, that more than one example of the Crested Lark had since been obtained in Ireland must be repeated here, though the Editor has failed to obtain any confirmation of it from the naturalists of that kingdom.

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* Syst. Nat. Ed. 12, i. p. 288 (1766).

The first British-killed specimen about which no doubt can exist is one in Mr. Bond's collection, and from it, by his kindness, the figure here given was taken. It was procured at Littlehampton, and its occurrence was made known in the second edition of this work, published in 1845. In September, 1846, two male examples, shot by Mr. Vingoe on the roadside between Penzance and Marazion, were recorded by Mr. Rodd (Zool. p. 1497). One of these is now in his collection and the other in that of Mr. J. H. Gurney, jun. In October, 1850, another specimen was obtained in the same neighbourhood (Zool. p. 3033). A fifth English example, now in Mr. Monk's collection, was taken near Shoreham by a birdcatcher, 20th October, 1863, and seen alive the same day by Mr. Rowley (Ibis, 1864, p. 224), while, apparently in the autumn of 1865, a sixth was killed by Mr. Gill of Falmouth, who still possesses the specimen, at a place called Budock Bottoms, as recorded by Dr. Bullmore in his 'Cornish Fauna' (p. 20). A "crested lark" is also said to have been seen near Blackheath, 1st June, 1867 (Zool. s.s. p. 1167), by Mr. Hutchinson*.

When we consider that this species is common just on the other side of the Straits of Dover, its rare occurrence on our own shores is the more singular, and perhaps is only to be explained by the fact that it is, as Larks go, very little of a voyager, living for the most part solitarily or in small companies, and seldom if ever flocking to undertake great migrations. Moreover, from some cause with which we are at present unacquainted, its distribution in Northern France is not universal, for according to Vieillot it is only known in those districts of Normandy where vines are grown. Its habits have been described at great length by many observers, and would seem to partake in some measure of those of our two common species—its flight, in particular, resembling that of the Woodlark. But the Crested Lark shews a greater partiality than either for the haunts of man: not only is it found frequenting roadways, but it is met with in the neighbourhood of houses, often entering villages and the smaller towns, perching on walls or low roofs and seeking its food on middens. The cock has a soft and pleasant song, constantly to be heard from early spring to September, and generally given in the air, but occasionally when there the bird is perched on an elevation, while, from what Vieillot says, the hen also sings though less well. It runs quickly, often avoiding a passer-by in that manner, and if made to take wing quickly realights. The nest is generally placed in a hoof-print or other shallow depression of the ground, but sometimes on a bank or mud-wall, or even on the ridge of a low thatched shed. It is built very like that of the Skylark, and the hen lays four or five eggs of a french-white, sparsely freckled, spotted and blotched with hair- or olive-brown and dull lavender. They measure from 1·1 to ·86 by from ·72 to ·65 in. The Crested Lark feeds on various insects, worms, seeds and grain, and the Author remembers when travelling from Calais to Paris, seeing some of these birds occasionally picking, like Sparrows, at the horse-droppings in the road, flying off, on the approach of a carriage to the roadside, settling on the footpath or perching on any low rail till the vehicle had passed, and then returning to renew their search.

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* The occurrence of one at Macclesfield is also mentioned in 'Nature' for 18th December, 1873 (ix. p. 132).

The Crested Lark is found in Belgium and though scarce there it breeds near Ostend, but it is comparatively common in parts of Holland. It has occurred in Heligoland and inhabits Denmark, where it is however very local. It reaches also the extreme south of Sweden, wintering as well as breeding there. Throughout the whole of North

Germany it is a constant frequenter of the roadways, and most common near the villages. Thence it extends through Livonia and Estonia and has been obtained at least twice on the south coast of Finland, but in Russia it is only occasionally observed so far to the north as Moscow, and does not appear to occur at Orenburg, though plentiful further south. From the Ural it may be traced across the Kirgis Steppes to Mongolia and China. It is also found in India, being most abundant in the north and north-west, and returning westward it inhabits Beloochistan, Persia, Arabia, the highlands of Abyssinia, Kordofan, and Egypt of course. Thence it may be followed through Tripoli, Algeria and Morocco back to Western Europe, while within the circuit thus drawn it occurs generally with greater or less frequency. Wherever it approaches the borders of the desert country, a pale-coloured form appears which is commonly recognized as a good species under the name of *Galerita isabellina*, and a second form, larger and with a more powerful bill, the *G. macrorhyncha* of Canon Tristram, is also found along the northern edge of the Sahara; but it must be confessed that so much do Larks generally, and those of this group certainly not excepted, vary according to locality, not merely in colouring but in features which among most birds are accounted good diagnostic characters, that it is quite a matter of opinion whether the two forms just named, as well as some others, should not be regarded as specifically identical with *Alauda cristata*. The typical form however seems to be the only one which inhabits any part of Europe except Portugal and Spain, where a second which has received the name of *Galerita theclæ* is also found.

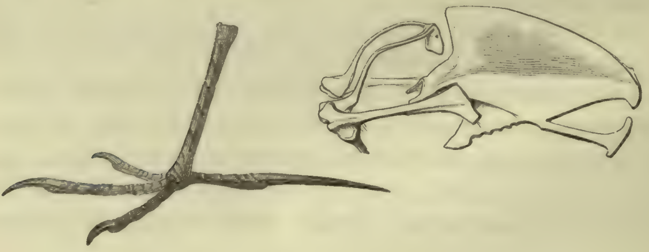
The bill is brown along the ridge and at the point, but paler on the sides and at the base: irides hazel: the crown of the head reddish-brown, with a few feathers elongated, forming a conspicuous crest; from the eye passing over the ear-coverts a streak of buffy-white; ear-coverts and back of the neck dark brown; back, wing-coverts and wings, brown, the shaft and middle of each feather dark brown; the wing-coverts and tertials edged with buffy-white ; the two middle tail-feathers nearly uniform light brown ; the outer tail-feather on each side light brown, with a buffy-white outer margin ; the other tail-feathers dark brown ; the chin white ; neck in front, breast and under parts pale yellow-brown ; the breast and flanks streaked with darker brown : legs, toes and claws, pale brown.

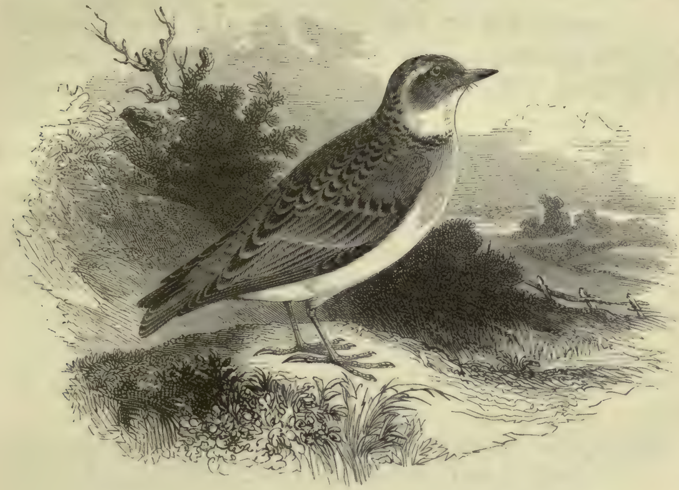
The whole length of the bird is six inches and three-quarters ; the wing from the anterior bend to the tip of the longest primary four inches and one-eighth ; the bill along the ridge seven lines ; the tarsus one inch ; the hind toe and claw nine lines.

The females are said to be smaller than the males, and to have a shorter crest. The young are generally paler and more rufous than the adults, and have all the feathers above with a narrow, dark subterminal bar and a whitish tip.

To the description above given must be added that the axillary feathers and lower wing-coverts are rufous-buff, and that the wing-quills beneath have a border of the same colour at the base of their inner web. This is a feature common to all the Crested Larks which, from their thicker, stronger and more curved bill, have been separated from the genus *Alauda* by many authors. The proper name which the group should bear is, however, doubtful. The earliest, *Galerida*, given by Boie in 1828, is, when spelt correctly, *Galerita*, found to have been preoccupied for a genus of insects, and is, therefore, though very generally used, inadmissible.

The vignette below represents the breast-bone and the feet of the Skylark of the natural size.





CALANDRELLA BRACHYDACTYLA (Leisler*).

SHORT-TOED LARK.

Alauda brachydactyla.

CALANDRELLA, *Kaup* †.—Bill rather short, stout and compressed, upper mandible arched and without notch. Nostrils basal, oval, closely covered by feathers and bristles directed forwards. Gape straight. Head without elongated feathers. Wings moderately long: first primary so small as at first sight to seem wanting, second, third and fourth nearly equal, but the third longest; secondaries short and emarginate at the tip; tertials very long, about equal to the fifth primary. Tail rather long and slightly forked. Tarsus blunt and scutellated behind as well as before, longer than the middle toe. Claws slightly curved and very short, except that of the hind toe which is moderately elongated and nearly straight.

AT the end of October, 1841, I was informed by Mr. H. Shaw, of Shrewsbury, that an example of the Short-toed Lark had been caught in a net near that town on the 25th of that month; and shortly afterwards he sent the specimen to me for my examination.

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* *Alauda brachydactila* (misprint), Leisler, Annalen der Wetterauischen Gesellschaft für die gesammte Naturkunde, iii. tab. xix. p. 357 (1814).

† Skizzirte Entwickelungs-Geschichte und Natürliches System der Europäischen Thierwelt, p. 39 (1829).

The occurrence of five other examples in this country, with the asserted capture of a sixth, has now been recorded. All of these birds appeared on the south coast of England: three of them at or near Brighton—namely in September 1854 (Zool. p. 4558), April 1858 (Ibis, 1859, p. 330), and November 1873 (Zool. s.s. p. 3832); one near Southampton (Zool. p. 7930) in the winter of 1861–62, whose captor said he had taken another ten years before; and one shot at Scilly (Zool. p. 4477) almost simultaneously with the occurrence of the first Brighton example, which as well as the last bird obtained at this place and that procured near Southampton were netted, and lived for a longer or shorter time in captivity.

This species seems to have been discovered by M. Castelnau near Montpellier and made known to his friend and teacher Leisler, who first described and figured it in 1814, stating that it occurred in Italy* as well as in the south of France, and supposed that it might also inhabit Germany, an anticipation that has hardly been realized, for though, as all ornithologists are aware, its manners have been studied and recorded at great length by numerous observers in many parts of the world, its appearance in Germany is as rare as in England. Herr Gätke includes it in his list of stragglers to Heligoland, and, according to M. de Selys, it has occurred accidentally in summer in Lorraine, as well as in Picardy. It has been killed near Paris and is found in Champagne where Vieillot†, on the authority of M. de Riocourt, says it is very numerous, arriving there towards the end of April, affecting dry, sandy places, and breeding several times in the course of the summer. As soon as the young of the last brood can shift for themselves the different

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[*] Bonelli in Italy indeed may have anticipated the French discovery, but he, according to Dr. Salvadori (Faun. d'Ital. i. p. 134), never published any description of the *Alauda calandrella* as he seems to have called the species in 1811.

[†] He did not know of the prior discovery of the species and, thinking it was new to science, named it in 1816 *Alauda arenaria* (N. Dict. d Hist. Nat. Ed. 2, i. p. 343).

families unite in large bands and, quitting the uncultivated lands, resort to the fresh tilth and oat-fields, finally leaving the country towards the end of August. In like manner it inhabits Burgundy, and Mr. Edward Newton found it, in 1859, breeding near Blois, but it becomes still more numerous further southward, as in Gascony, Languedoc and Provence. In the last it abounds, say MM. Jaubert and Barthélemy-Lapommeraye, from March to the end of September, but is never found in winter. In Central and Southern Spain it is exceedingly common, but here, or at least in Andalucia, a second nearly-allied form has lately been detected by Lord Lilford, the existence of which impairs the value of former observations unless made by discriminating ornithologists. This second form, described and figured by Mr. Dresser under the name of *Calandrella bætica*, is at once distinguished from our bird by its greyer coloration and its distinctly striped back and breast, and it appears to be confined to the corn-lands, never frequenting the open "*marisma*" properly so called, the dried edges of which, with the rough fallows, *C. brachydactyla* particularly haunts. In Portugal our Short-toed Lark is said to be very common, and Dr. Rey found it especially so in barren places in the province of Algarve. It has long been known from the Canaries, where according to Dr. Bolle it is numerous on some of the islands, and it is met with in suitable localities throughout North Africa, from Morocco to Egypt. Here, however, also occurs another allied form, *C. minor* (Cabanis), which has a stouter bill, is smaller in size, more rufous in colour and seems to be wholly a dweller in the desert. *C. brachydactyla* nevertheless is plentiful in some parts of Algeria, where it remains all the year round and like the rest of its brethren in that country places its nest on the sheltered side of a bush. It is also numerous in the Balearic and all the other islands of the Mediterranean, being, according to Mr. Wright, one of the most characteristic birds of Malta in the breeding-season. In Northern and Central Italy it is common on its spring and autumn passage, but it may possibly remain throughout the winter in the south, as it certainly does in some parts of Greece, though in Turkey it is but a summer-visitor. It probably occurs in Southern Russia, but in that country generally its place is taken by another species *C. pispoletta* (Pallas), which ranges thence to China and is to be distinguished, among other features, by its spotted breast and much shorter tertials. Both species however occur in Persia and India, but returning westward *C. brachydactyla* is found in Asia Minor and Palestine, to the exclusion apparently of the other, and is there a summer-migrant, though Canon Tristram believes that on the slopes of the Lebanon and Mount Hermon there is a resident form which he has separated by the name of *C. hermonensis*—a distinction not allowed by Mr. Dresser. The ordinary Short-toed Lark occurs in Arabia and on the shores of the Red Sea, proceeding in autumn up the valley of the Nile as far as Sennaar and Kordofan, where in winter it collects in enormous flocks.

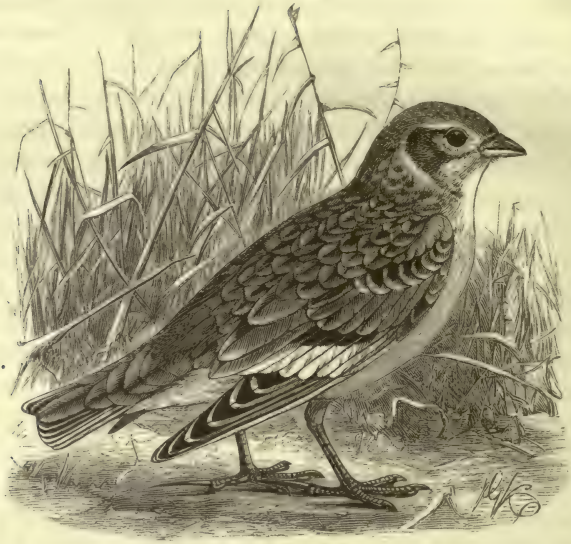
The food of this bird seems to consist almost exclusively of small seeds, the husk of which it has the faculty of breaking in its bill, but one may presume that insects of some sort are supplied to the young. On the ground it runs quickly and is especially fond of grovelling in sand. When at large it never perches on shrubs or bushes, though in confinement, like the Skylark, it will readily take to a perch. The cock is said to have a lively song given on the wing both morning and evening, but seldom in the middle of the day, its flight and notes in some degree resembling those of our own favourite songster, and the latter indeed are by some accounted more melodious and agreeable. The nest is formed of a few bits of grass, collected in a depression of the ground, often a horse's foot-print, and the eggs, four or five in number, are of a french-white, generally minutely freckled with pale hair-brown, but sometimes blotched boldly with a deeper shade, and occasionally with patches of pale lavender: they measure from ·87 to ·73 by from ·62 to ·55 in.

The male has the bill of a dull flesh-colour, darkest along the culmen: irides olive-brown: each feather of the top of the head dark brown, broadly edged with light fawn-colour so as to produce a general striped appearance; lores and a streak over each eye pale cream-colour; cheeks and ear-coverts of the same, the latter mixed with dark brown, forming an ill-defined patch under and behind the eye; upper parts generally very similar to the top of the head, but rather paler in hue, the light edges of the feathers on the nape and of the upper tail-coverts very broad, shewing but little of the darker colour, those of the feathers of the mantle narrower; wing-quills greyish-brown, the outer long primary (in this genus the second) with a dull cream-coloured border, the shorter primaries and secondaries bordered outwardly and tipped with a lighter shade; tail-quills dark brown, the outer web of the outer pair dull white, and their inner web with an ill-defined, triangular, white patch extending two-thirds of its length from the tip, the next pair with the outer web bordered and the inner slightly tipped with dull white, the middle pair broadly edged with bright sandy-grey; chin, throat and lower parts generally, dull white, clouded on the sides of the neck with fawn-colour, so as to form an ill-defined darker patch, on the upper part of which are a few dark brown feathers; flanks pale mouse-colour: legs, toes and claws light brown.

The sexes are hardly distinguishable in plumage; but the female is said to want the dark marking on the sides of the neck and to be somewhat duller in tint. The young have the outer edge of each feather tipped with buff.

The whole length of the Shrewsbury specimen was five inches and three-quarters; the tarsus three-quarters of an inch; the hind toe half an inch, its claw a quarter of an inch; from the carpal joint to the tip of the wing three inches and a half; the first primary is so small as not to be easily discovered, and the third, having the appearance of the second, is the longest in the wing, the second and fourth are a little shorter.

PASSERES. *ALAUDIDÆ.*



MELANOCORYPHA SIBIRICA (J. F. Gmelin*).

WHITE-WINGED LARK.

MELANOCORYPHA, *F. Boie*†.—Bill short, stout, subconic and slightly compressed; upper mandible arched from the base and without notch. Nostrils basal, oval, closely covered by bristly feathers directed forwards. Gape straight. Head without elongated feathers. Wings long: first primary very small and nearly obsolete; second and third nearly equal and longest; secondaries very short and emarginate at the tip; tertials moderate, not exceeding the sixth primary. Tail short and slightly forked. Tarsus blunt and scutellated behind as well as before, longer than the middle toe; claws moderate and slightly curved, except that of the hind toe which is much elongated and straight.

MR. ROWLEY was the first to recognize in a Lark netted near Brighton, November 22nd, 1869, and shewn to him while alive on that day by Mr. Swaysland, an example of this rare species, which has but seldom visited Western Europe. At a meeting of the Zoological Society, January 27th, 1870,

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* *Alauda sibirica*, J. F. Gmelin, Syst. Nat. i. p. 799 (1788).

† Isis, 1828, p. 322.

Mr. Rowley exhibited this specimen*, stating that it was a hen bird, and when caught was associating with a flock of about two dozen Snow-Buntings (Proc. Zool. Soc. 1870, pp. 52, 53). The specimen is now in Mr. Monk's collection and up to the present time is the only one known to have occurred in Britain.

This fine Lark was originally described by Pallas in 1773 (Reise u. s. w. ii. p. 708) as a variety of the *Alauda calandra* of Linnæus, which it somewhat resembles, and fifteen years later first received a specific denomination from J. F. Gmelin. Subsequently Pallas, in his great work on the Zoology of the Russian Empire, renamed it *A. leucoptera* and said that it was especially common in the Desert of Baraba from the river Om to the Altai and was most abundant along the course of the Irtish where he first discovered it. In 1773 he found it on the steppes of the river Jaik or Ural, and it appeared to him to visit the whole of Great Tartary. Later observers state that it does not occur to the eastward of the Jenisei and its affluents, and therefore its range in that direction is not very great. It is found throughout the Kirgis Steppes and Mr. Dresser has a specimen from Kokand, while westward it inhabits the country between the Jaik and the Volga as high as Orenburg and Saratov. In South Russia generally, though occurring in the Government of Ekaterinoslav, it is said by the elder Nordmann to be very rare, and he never saw it alive. According to Herr E. J. von Homeyer (Journ. für Orn. 1854, p. 364), Herr Radde sent a specimen from Jeni-Sala. It was obtained by Capt. Blakiston in the Crimea, in January 1856, and it appears occasionally in hard winters on the Bosphorus, whence Mr. Robson has sent many specimens, but there is no evidence of its occurrence further to the south. Count Casimir Wodzicki states (Naumannia, 1852, ii. p. 68) that it has been often observed in Poland, and that two (of which one was killed) were seen in October, and a third in December, 1851, in Eastern Galizia on grassy swamps. Herr von Csató says (Verhandl. siebenbürg. Verein, xiii. p. 174) that he found it at Koncza in Transsylvania, December 24th, 1855. It is not admitted as a German bird by the ornithologists of that country*, and the only other instances of its occurrence in Western Europe are those recorded by Dubois who states (Journ. für Orn. 1856, pp. 505, 506) that one, now in the collection of M. de Selys, was caught in October 1855 near Liège, and that another was killed near Mechlin, in October 1856, by M. de la Fontaine.

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* The Editor had the opportunity of previously seeing this specimen, for on the morning of New-Year's day, 1870, just after having read a notice in the 'Zoologist' (s.s. p. 1984) in which it was designated a young Snow-Finch (*Montifringilla nivalis*), he accompanied Mr. Rowley to Mr. Swaysland's shop, and had the pleasure of confirming the determination of his friend, who on the same day sent to the conductor of that journal a correction of the error which was eventually printed (*tom. cit.* p. 2066).

Of the habits of this bird we know little. The examples seen in Galizia were said to have been not shy and to utter no sound, behaving much like other Larks, but not running so quickly or readily. According to Eversmann it prefers the levels and heights of the steppe which are most clothed with vegetation. Pallas says that it frequents the roadsides, singing as it flies with a strain somewhat differing from and shorter than a Skylark's, and that it does not often rise aloft though it warbles for a long time while hanging in the air. It pairs about the middle of May and builds its nest of grass on the ground. The eggs are four or more in number, and specimens received from the Volga measure from ·94 to ·79 by from ·67 to ·6 in. They are of a french-white, sometimes closely mottled but oftener sparsely and boldly blotched with dark olive-brown. The more recent evidence of two Russian observers, quoted by Mr. Dresser, is much to the effect of that above given, the only serious discrepancy being that by one of them the breeding-season is put about a month earlier, but that no doubt depends upon the time when spring comes to the locality; for the bird, though much later in returning to its summer-quarters than the Skylark, arrives in Southern Russia as soon as the grass of the open districts it frequents is green.

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* Bechstein long ago recorded that during a deep snow in March, 1789, he caught, under a sieve at his own door, among a number of Woodlarks, seven examples of what he called *Alauda arvensis ruficeps*, and it has been thought that these belonged to the present species. But his description, as it seems to the Editor, forbids such an assignment, and still more that, having kept one of his birds alive for a whole year, he convinced himself that it was only a variety of the Skylark, of which Borkhausen also possessed other specimens.

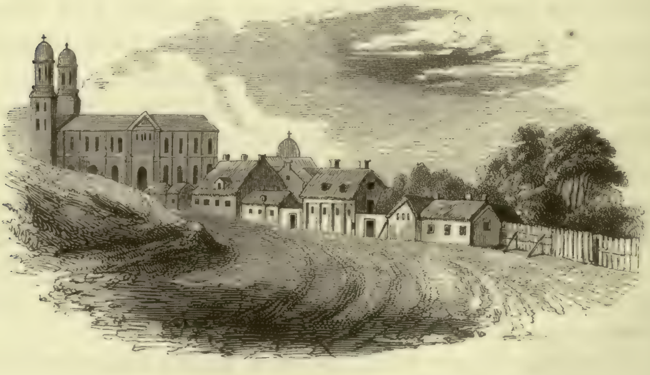
The adult male has the bill horn-coloured, darkest on the culmen and inclining to yellow on the middle of the lower mandible: irides brown: lores and sides of the head dull white mottled with dusky, a clear white stripe over each eye; top of the head and ear-coverts dull chestnut, the latter interspersed with white; nape, mantle, back and upper tail-coverts deep brown, each feather darkest along the shaft and brownish-grey at the edges, especially on the nape and rump, and tinged on the upper parts with rufous; upper or least wing-coverts chestnut, the next set dark brown at the base, then chestnut, and whitish at the tip; the coverts of the secondaries very similar, but also bordered with reddish-grey, those of the primaries chestnut with a dark brown patch on the inner web; the outer margin of the wings white; primaries blackish-brown, outwardly edged with dull white, the fourth to the seventh of them being also broadly tipped with buff, the eighth, ninth and tenth with nearly all the inner web, and tip of the outer web, white; secondaries white with dark brown at the base; tertials dark brown with light rufous edges, and the longest with a white patch on the outer web; the middle pair of tail-feathers dark brown broadly edged with rufous, the next three pairs blackish-brown edged with white, the second pair with the outer web white, and the outer pair altogether white; the chin, throat, sides of the neck and lower parts generally white, with a line of dusky arrow-headed spots running from the corner of the gape on each side, spreading out on the foreneck and breast, and on the sides of the latter mixing with some rufous streaks; sides of the body distinctly striped with dark brown, the feathers immediately above the tarsus light brown: legs, toes and claws bluish-grey.

The whole length is about seven inches and a half, the wing from the carpal joint to the tip about four inches and five-eighths.

The female much resembles the male but is smaller and not so brightly-coloured. The young are said to resemble those of the Skylark, from which, however, they can be readily distinguished by their larger size and stouter bill: the breast also is less distinctly spotted and the feathers of the upper plumage are tipped with pure white.

Two examples of the Calandra Lark (*Melanocorypha calandra*) are recorded as having been killed in England—one near Devonport (Zool. p. 8768) the other near Exeter (Zool. s.s. p. 1599). Neither specimen was for some time recognized as belonging to the species, and therefore in each case the chance of a mistake seems possible. Accordingly until the occurrence of this bird in Britain has been better substantiated the Editor deems its omission from the present work the more prudent course.

The vignette below represents one of the entrances to the city of Upsala, taken from a plate in Consett's 'Tour through Sweden,' and probably gives a view of the most usual approach to that famed University, not very different from its appearance soon after Linnæus had ceased to be its chief ornament. The large building seen on the left is the metropolitan cathedral of Sweden, which among the remains of other worthies holds those of that great naturalist.



END OF THE FIRST VOLUME.

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